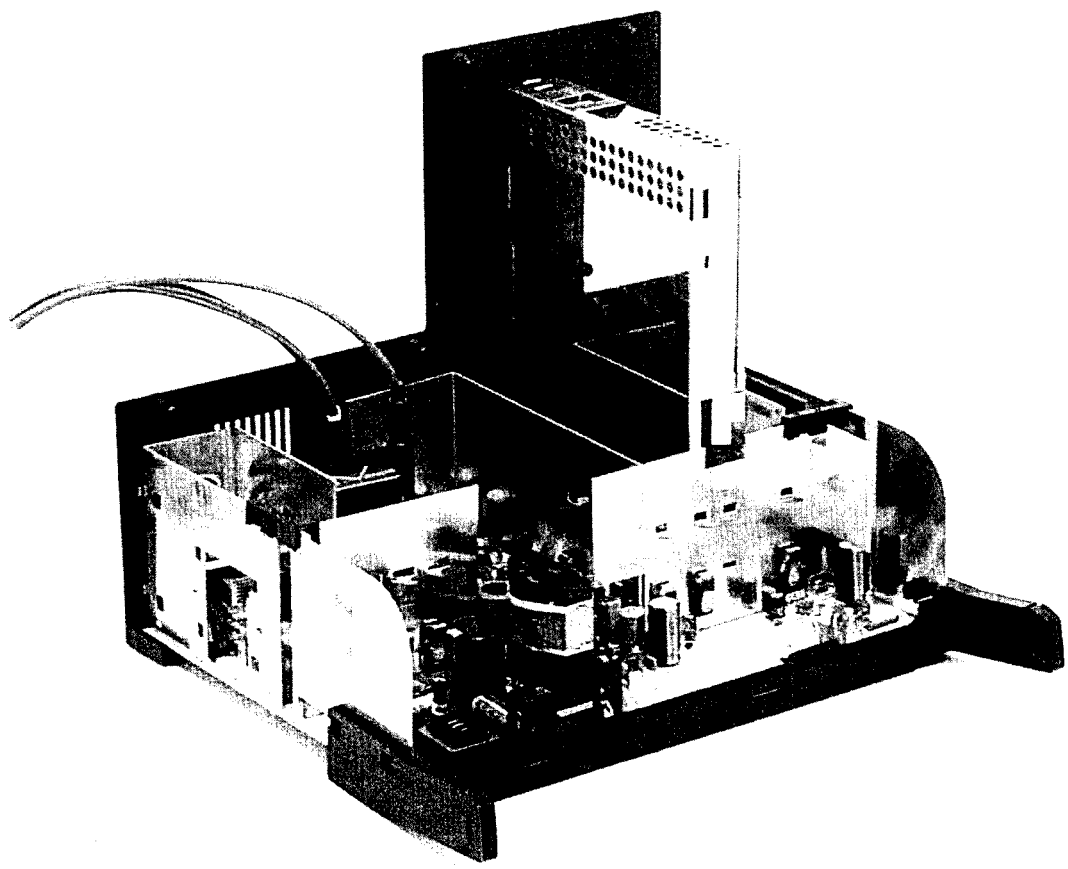
# MULTI CONCEPT 2A
# TX CHASSIS
# (100 Hz, 4:3)

# TV

09 /2001

(GB) Service manual
(D) Service-Manual
(S) Serviceanvisning
(F) Manual de service
(I) Manuale di servizio

FINLUX SALORA Luxor



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## (GB) Repair instructions

Service and repair work must be performed only in accordance with the existing safety regulations!

Where a high current or a mechanical stress exists solder connections have been strengthened by using eyelets. Such a connection must not be left without an eyelet. Wiring has an effect on safety and EMC (Electro-Magnetic Compatibility). Therefore wires must be maintained in their original positions.

**X-RAY REGULATIONS:**
The picture tube type and the maximum permissible high-voltage ensure that the X-ray intensity of the receiver remains far below the permissible value. The high-voltage must not exceed the value mentioned on the type label. The high voltage is within the permissible limits when the operating voltage (U1) of the horizontal deflection stage is accurate. Refer to the section "Service adjustments".

**ESD Warning**
The receiver contains components that are sensitive to electrostatic discharge (ESD). Any servicing or repair work must be done in an environment where the components will not be subjected to ESD. Use a special grounding device!

**Surface-Mounted Device (SMD)**
SMD's are glued and soldered. In order not to damage the P.C.B e.g. when replacing ICs and similar components with many soldering points, special tools are required when servicing SMD's.

**Changes**
The manufacturer reserves the right to change the design and specification without prior notice.

## (D) Reparatur-Anweisung

Service- und Reparaturarbeiten dürfen nur in Übereinstimmung mit den gültigen Sicherheitsbestimmungen durchgeführt werden!

Bei bestehendem hohen Stromwerten oder mechanischer Beanspruchung müssen Lötverbindungen durch Ösen verstärkt werden. Eine derartige Verbindung darf nicht ohne Öse ausgeführt werden.

Die Verdrahtung hat Einfluß auf die Sicherheit und die elektromagnetische Verträglichkeit. Daher muß die ursprüngliche Anordnung der Verdrahtung erhalten bleiben.

**RÖNTGENVERORDNUNG**
Der Bildröhrentyp und die maximal zulässige Hochspannung stellen sicher, daß die Intensität der Röntgenstrahlen des Fernsehgerätes weit unter dem zulässigen Wert bleibt. Die Hochspannung darf nicht den auf dem Typenschild befindlichen Wert überschreiten. Die Hochspannung liegt im zulässigen Bereich, wenn die Betriebsspannung (U1) der Horizontal-Ablenkstufe genau eingehalten wird. Siehe auch Abschnitt "Service-Einstellungen".

**EGB-Warnung**
Das Fernsehgerät enthält Bauteile, die empfindlich auf elektrostatische Entladung reagieren. Alle Service- oder Reparaturarbeiten sind in einer Umgebung durchzuführen, in der die Bauteile nicht elektrostatischer Entladung ausgesetzt sind. Verwenden Sie eine spezielle Erdungsvorrichtung!

**SMD-Bauelement**
Die SMD's sind geklebt und verlötet. Es sind spezielle Werkzeuge erforderlich, damit bei Austausch von ICs und ähnlichen Bauteilen mit vielen Lötpunkten die Leiterplatte nicht beschädigt wird.

**Änderungen**
Der Hersteller behält sich das Recht vor, Änderungen in Bauart und Ausführung ohne vorherige Ankündigung durchzuführen.

## (S) Reparationsinstruktioner

Service och reparationer måste utföras med hänsyn till gällande säkerhetföreskrifter.

Lödningar som utsätts för höga strömmar eller mekanisk belastning är förstärkta med genomföringshylsor. Dessa anslutningar får inte lämnas utan dessa hylsor.

Kabeldragningen har inverkan på säkerhet och EMC (Elektromagnetisk kompabilitet). Därför måste kablarna monteras i deras originalposition.

**RÖNTGENSTRÅLNING:**
Bildrörstyp och begränsning av maximum högspänning garanterar att mottagarens röntgenstrålning hålls långt under tillåten nivå. Högspänningen får inte överskrida värdet som visas på typetiketten. Högspänningen är inom tillåtna gränser när horisontalavlänkningens drivspänning (U1) är rätt inställd. Se avsnitt "Service-inställningar".

**ESD varning**
Mottagaren har komponenter som är känsliga för elektrostatisk urladdning (ESD). All servicearbete måste göras så att dessa komponenter inte utsätts för ESD. Använd en speciell jordninganordning.

**Ytmonterade komponenter (SMD)**
SMD-komponenterna är både limmade och fastlödda. För att inte skada kretskortet när man t.ex. byter IC:n med många lödpunkter bör man använda specialverktyg.

**Ändringar**
Tillverkaren reserverar rätt till att ändra design och spesifikationer utan skild meddelande.

## Ⓕ Instructions de reparation

Les opérations de maintenance et les réparations ne doivent être effectuées qu'en conformité avec les règles de sécurité en vigueur !

Les connexions par soudure doivent être renforcées par des oeillets lorsqu'elles sont soumises à une forte intensité de courant ou à des contraintes mécaniques importantes. Ces connexions doivent toujours être renforcées par ce moyen.

Le câblage est un facteur important pour la sécurité et les perturbations électromagnétiques. En conséquence, maintenez les câbles dans leur position initiale.

**REGLEMENTATION RELATIVE AUX RAYONS X :**
Votre tube cathodique et la tension maximale autorisée garantissent le maintien des rayons X bien en decà du niveau autorisé. La tension la plus élevée ne doit pas dépasser la valeur indiquée sur la plaquette signalétique de l'appareil. Cette tension reste dans la fourchette autorisée lorsque la tension de service (U1) d'étage de déflexion horizontale est précise. Reportez-vous à la section "Réglages de service".

**Avertissement concernant les décharges électrostatiques**
Le récepteur contient des composants sensibles aux décharges électrostatiques (DES). Les opérations de maintenance et les réparations doivent être effectuées dans un environnement n'exposant pas les composants à ces décharges. Pour cela, utilisez un dispositif de mise à la terre spécial !

**Composants montés en surface (SMD)**
Ces composants sont collés et soudés. Pour ne pas endommager les cartes à circuits imprimés, par exemple lors du remplacement de circuits et de composants similaires ayant de nombreux points de soudure, vous devez utiliser des outils spécifiques lorsque vous effectuez la maintenance des appareils montés en surface.

**Modifications**
Le fabricant se réserve le droit de modifier la conception et les caractéristiques de son produit sans avis préalable.

## Ⓘ Istruzioni di servizio

Interventi di assistenza tecnica e riparazione devono essere eseguiti nel più assoluto rispetto delle norme di sicurezza vigenti!

Qualora esistano condizioni di elevati livelli di corrente e stress meccanici le connessioni saldate sono state potenziate tramite occhielli. Questo tipo di connessioni non devono essere lasciate senza occhiello.

Le connessioni influiscono sulla sicurezza e gli standard EMC (Electro-Magnetic Compatibility). Pertanto, i fili elettrici devono essere mantenuti nelle loro posizioni originarie.

**NORME SUI RAGGI X:**
Il tipo di tubo catodico unitamente all'uso del massimo livello di alta tensione consentito fanno sì che l'intensità dei raggi X del ricevitore rimanga molto al di sotto del valore consentito. L'alta tensione non deve superare il valore indicato sull'apposita etichetta. L'alta tensione rientra nei limiti consentiti quando la tensione operativa (U1) del livello di deflessione orizzontale è corretta. Fare riferimento alla sezione "Regolazioni di servizio".

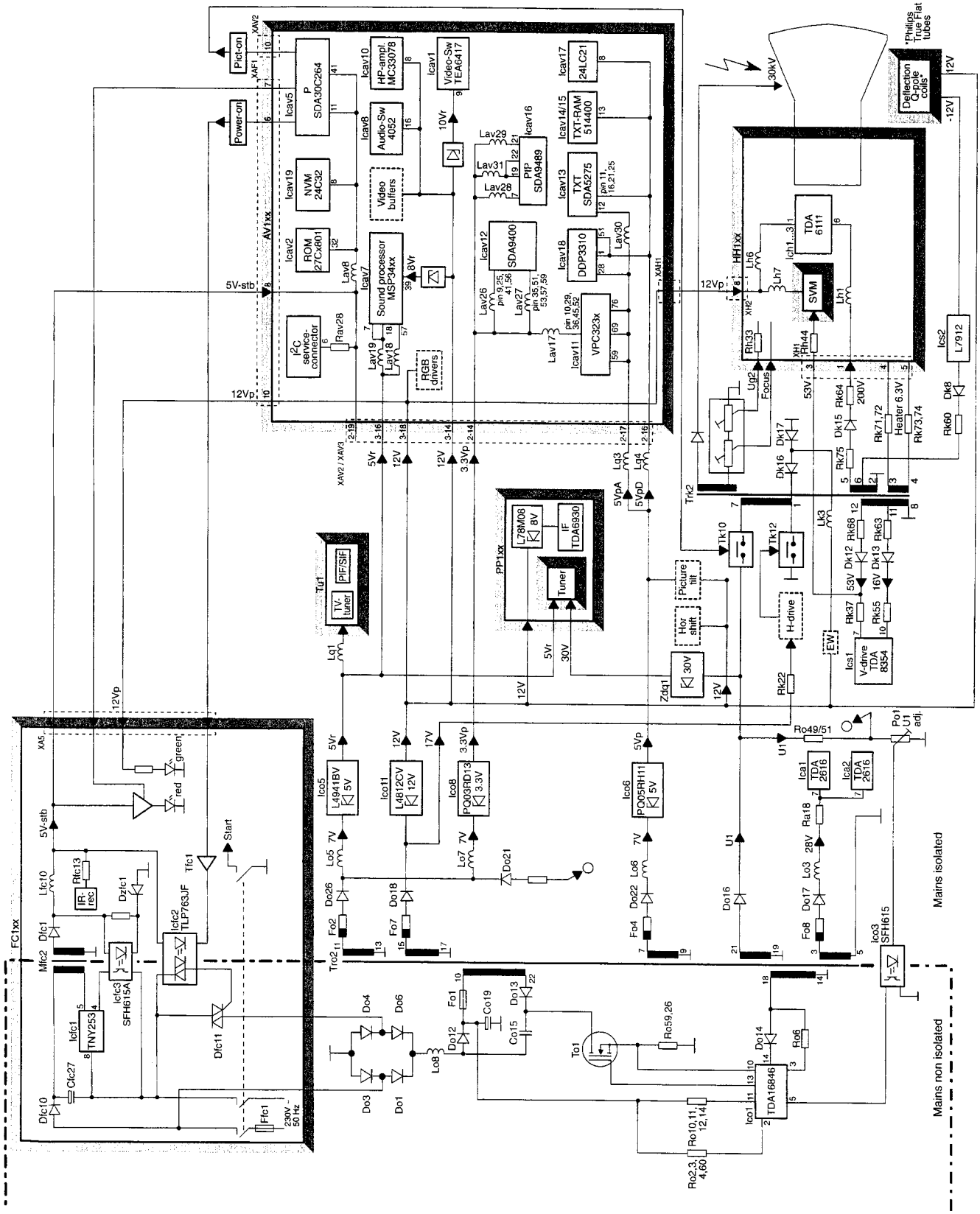
**Avvertenza ESD (scariche elettrostatiche)**
Il ricevitore contiene componenti sensibili all'elettricità statica. Qualsiasi intervento di assistenza tecnica o riparazione deve essere eseguito in un ambiente in cui i componenti non possano essere soggetti a scariche elettrostatiche (ESD). A tal fine, usare uno specifico dispositivo di messa a terra!

**Dispositivi SMD (Surface-Mounted Device)**
I dispositivi SMD sono incollati e saldati. Sono necessari strumenti specifici per non danneggiare la scheda PCB quando si sostituiscono circuiti integrati (IC) e simili componenti con molti punti di saldatura.

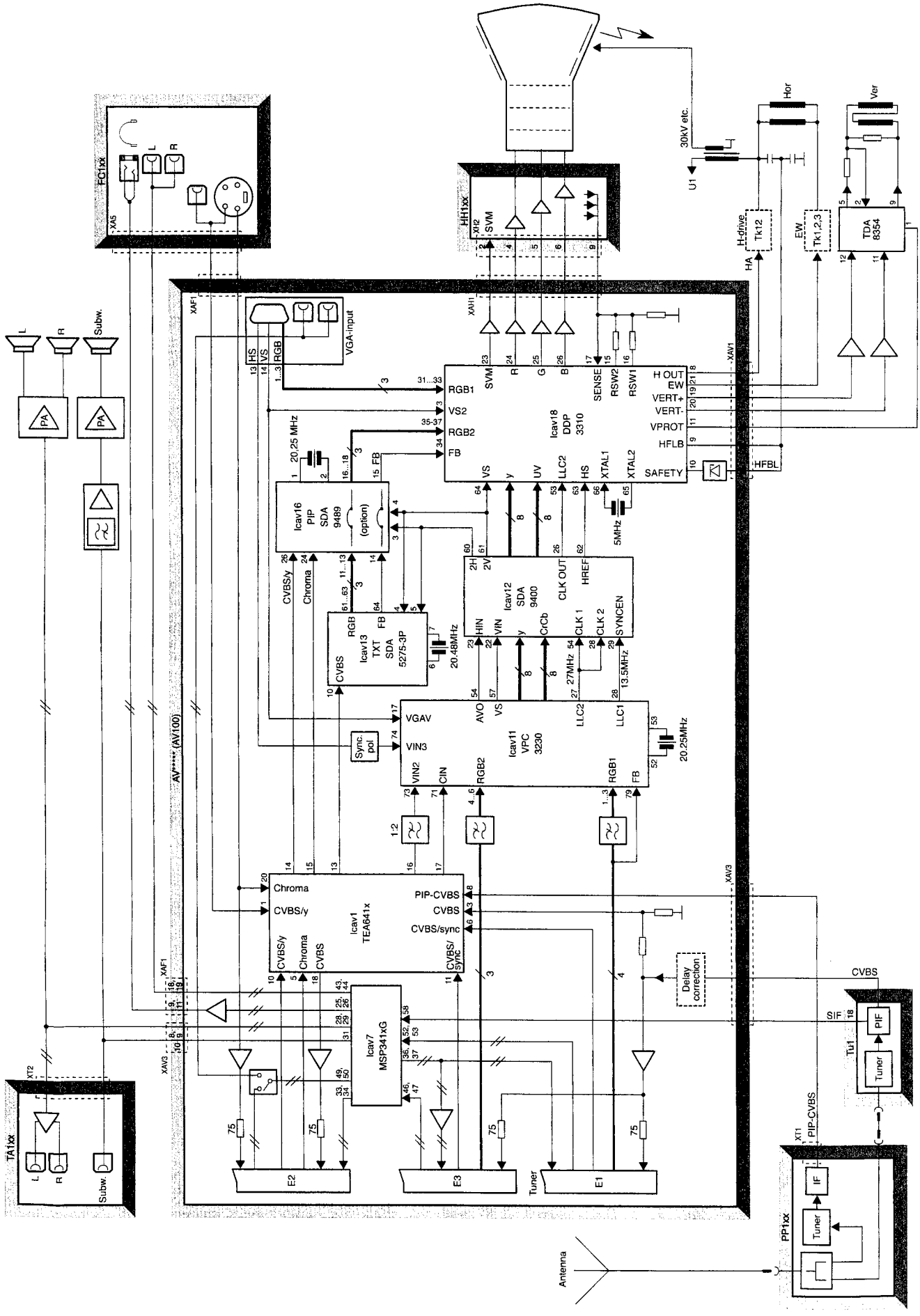
**Modifiche**
La Casa costruttrice si riserva il diritto di modificare il design e le specifiche senza preavviso.

| Technical data | Technische Daten | Tekniska data | Données téchniques | Dati tecnici | |
|---|---|---|---|---|---|
| **System** | **Norm** | **Norm** | **Systéme** | **Sistema** | PAL/SECAM B, G |
| Multinorm [1] | Multinorm [1] | Multinorm-TV [1] | Téléviseurs multinormes [1] | Televisori multistandard [1] | PAL/SECAM B, G, D, K, K1, L, L', I |
| NTSC | NTSC | NTSC | NTSC | NTSC | 3.58 MHz via scart |
| | | | | | 4.43 MHz via RF / scart |
| **Mains power** | **Netzanschluß** | **Nätanslutning** | **Alimentation** | **Tensione di alimentazione** | 195...264 V, 50 Hz |
| Consumption [2] | Leistungsaufnahme [2] | Effektförbrukning [2] | Consommation [2] | Consumo energetico [2] | 130 W (normal) |
| In stand-by | In Bereitschaft | I beredskapsläget | En mode veille | In standby | < 1 W |
| **Frequency range** | **Frequenzbereich** | **Frekvensområde** | **Gamme de fréquences** | **Campo di frequenza** | 48.25...855.25 MHz |
| **Sound output (RMS)** | **Tonendstufe (RMS)** | **Ljudeffekt (RMS)** | **Sortie sonore (RMS)** | **Potenza audio (RMS)** | 2 x 10 W/8 Ω |
| Subwoofer [1] | Subwoofer [1] | Subwoofer [1] | Subwoofer [1] | Subwoofer [1] | 14 W/16 Ω |
| **Connections on the front panel** | **Anschlüsse an der Vorderseite** | **Anslutningar på framsidan** | **Connexions sur le panneau avant** | **Connessioni sul pannello frontale** | |
| Headphones | Kopfhöreranschluß | Hörlurar | Ecouteurs | Cuffia | 32...600 Ω, 3.5 mm |
| Audio/Video | Audio/Video | Audio/Video | Audio/Vidéo | Audio/Video | Audio in: 0...2 V (RMS) |
| | | | | | Video in: 1 V/75 Ω |
| | | | | | Y/C in (SVHS) |
| **Connections on the rear panel** | **Anschlüsse an der Rückseite** | **Anslutningar på baksidan** | **Connexions sur le panneau arrière** | **Connessioni sul pannello posteriore** | |
| Audio/Video | Audio/Video | Audio/Video | Audio/Vidéo | Audio/Video | Audio in: 0...2 V/$R_{IN}$ = 1 kΩ |
| | | | | | Audio out: 0...2 V/$R_L$ min. 10 kΩ |
| | | | | | Video in/out: 1 V/75 Ω |
| | | | | | RGB in: 0.7 V/75 Ω (E1, E3 [1]) |
| | | | | | Y/C in (SVHS) (E2) |
| Antenna | Antennenanschluß | Antenn | Antenne | Antenna | 75 Ω |
| Audio output | Audio Ausgang | Ljudutgångar | Sortie audio | Uscita audio | |
| right/left | links/rechts | vänster/höger | gauche/droite | sinistra/destra | 0...2 V/10 kΩ (RCA) |
| subwoofer | subwoofer | subwoofer | subwoofer | subwoofer | 0...2 V/10 kΩ 20...180Hz (RMS) (RCA) |
| VGA input [1] | VGA Eingang [1] | VGA ingång [1] | Entrée VGA [1] | Ingresso VGA [1] | 640 x 480 60 Hz |
| | | | | | 640 x 400 70 Hz |
| | | | | | 640 x 350 70 Hz |
| | | | | | 720 x 400 70 Hz |
| VGA audio input [1] | VGA Audio-Eingang [1] | VGA ljudingång [1] | Entrée audio VGA [1] | Ingresso audio VGA [1] | 0...2 V (RMS) (RCA) |
| **Dimensions** [3] | **Maße** [3] | **Mått** [3] | **Mesurer** [3] | **Dimensioni** [3] | |
| (Width x depth x height / weight) | (Weite x Tiefe x Höhe / Gewicht) | (Bredd x djup x höjd / vikt) | (Largeur x profondeur x hauteur / poids) | (Larghezza x profondità x altezza / peso) | |
| 28" B8 4:3 | 28" B8 4:3 | 28" B8 4:3 | 28" B8 4:3 | 28" B8 4:3 | 754 x 500 x 565 mm / 33,0 kg |
| 28" V3 4:3 | 28" V3 4:3 | 28" V3 4:3 | 28" V3 4:3 | 28" V3 4:3 | 754 x 500 x 565 mm / 33,0 kg |
| 29" X3/X4 4:3 | 29" X3/X4 4:3 | 29" X3/X4 4:3 | 29" X3/X4 4:3 | 29" X3/X4 4:3 | 777 x 523 x 607 mm / 47,5 kg |
| **Specifications are subject to change.** | **Änderungen vorbehalten** | **Rätt till ändringar förbehålles.** | **Les spécifications peuvent être modifiées sans préavis.** | **Le specifiche sono soggette a cambiamenti.** | |
| [1] Not in all models. | [1] Nicht in allen Modellen. | [1] Inte i alla modeller. | [1] Pas sur tous les modèles. | [1] Non in tutti i modelli. | |
| [2] Depends on option modules and picture tube. | [2] Abhängig von Optionsmodulen und Bildröhre. | [2] Varierar beroende på moduluppsättning och bildrör. | [2] Dépend des modules optionnels et du tube cathodique. | [2] A seconda dei moduli opzione e del tubo catodico. | |
| [3] Approximately. | [3] Ungefähr. | [3] Cirka. | [3] Approximativement. | [3] Circa. | |

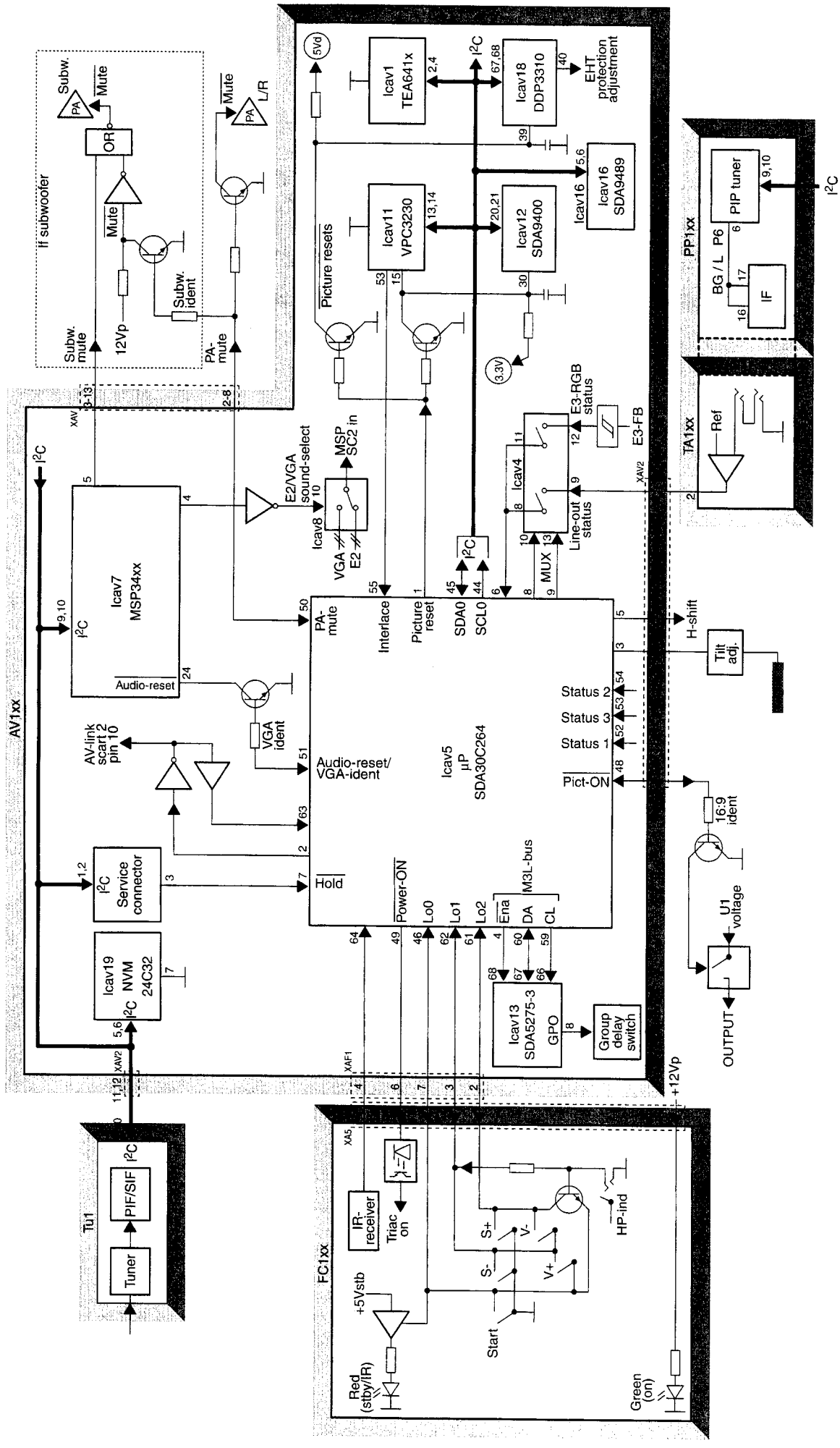
# Block diagram, power supply



# Block diagram, signal routes

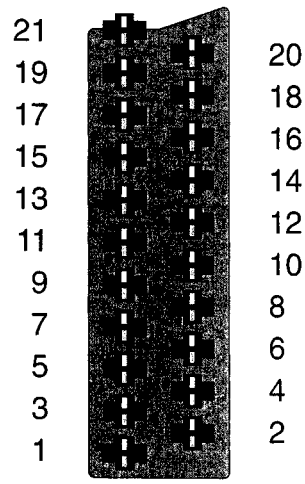


# Block diagram, control signals



## SCART connector (E1, E2 & E3)

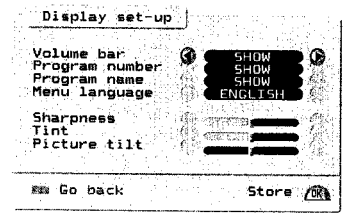
| Pin | SCART 1 (E1) | SCART 2 (E2) | SCART 3 (E3, not in all models) |
|---|---|---|---|
| 1 | Audio out R, 0.5V (RMS) | Audio out R, 0.5V (RMS) | Audio out R, 0.5V (RMS) |
| 2 | Audio in R, 0.5V (RMS) | Audio in R, 0.5V (RMS) | Audio in R, 0.5V (RMS) |
| 3 | Audio out L, 0.5V (RMS) | Audio out L, 0.5V (RMS) | Audio out L, 0.5V (RMS) |
| 4 | Ground, audio | Ground, audio | Ground, audio |
| 5 | Ground, blue | Ground | Ground, blue |
| 6 | Audio in L, 0.5V (RMS) | Audio in L, 0.5V (RMS) | Audio in L, 0.5V (RMS) |
| 7 | RGB input, blue | S-video chrominance out (copy from front AV-connector) | RGB input, blue |
| 8 | Switching voltage | Switching voltage | Switching voltage |
| | 0...2V : no function | 0...2V : no function | 0...2V : no function |
| | 4.5...7V : 16/9 picture ratio | 4.5...7V : 16/9 picture ratio | 4.5...7V : 16/9 picture ratio |
| | 9.5...12V : normal picture ratio | 9.5...12V : normal picture ratio | 9.5...12V : normal picture ratio |
| 9 | Ground, green | Ground | Ground, green |
| 10 | - | AV-link bidirectional control<br>logical 0: max 0.6V<br>logical 1: min 3.7V | - |
| 11 | RGB input, green | - | RGB input, green |
| 12 | - | - | - |
| 13 | Ground, red | S-video ground (chrominance) | Ground, red |
| 14 | Ground | Ground | Ground |
| 15 | RGB input, red | S-video input (chrominance) | RGB input, red |
| 16 | Switching voltage, RGB blanking | - | Switching voltage, RGB blanking |
| 17 | Ground, video | Ground, video | Ground, video |
| 18 | Ground | Ground | Ground |
| 19 | Video out, 1 Vpp/75 Ω | Video out, 1 Vpp/75Ω<br>S-video out (luminance) | Video out, 1 Vpp/75 Ω |
| 20 | Video in, 1 Vpp/75 Ω<br>RGB sync in | Video in, 1 Vpp/75 Ω<br>S-video in (luminance) | Video in, 1 Vpp/75 Ω<br>RGB sync in |
| 21 | Shield | Shield | Shield |



# Operating instructions

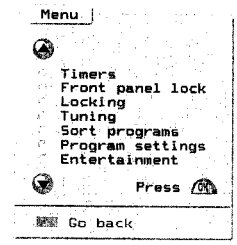
### Changing the menu language

1. Press the yellow button to select the Vision menu.
2. Press the red button to select the Display set-up menu.
3. Select "Menu language" with the arrow buttons (up/down) and change the menu language with the arrow buttons (left/right).
4. Press the OK button to store the changes.



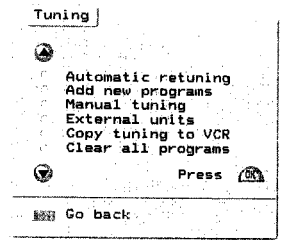

### Manual tuning

1. Select the programme number you want to tune.
2. Press the MENU button.
3. Select "Tuning" with the arrow buttons (up/down) and press the OK button.
4. Select "Manual tuning" with the arrow buttons (up/down) and press the OK button.
5. Press the red button (Channel search).
6. Press the OK button to store.
7. Press the TV button to exit.



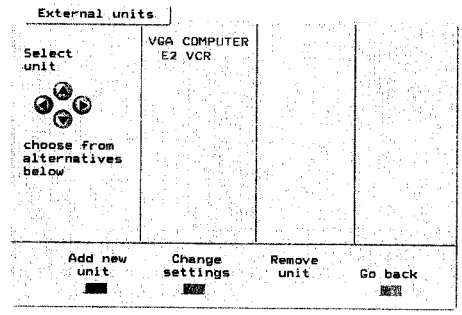

### APSi (Automatic Programming System)

1. Press the MENU button.
2. Select "Tuning" with the arrow buttons and press the OK button.
3. Select "Automatic retuning" and press the OK button.
4. To retune the channels, press the red button.
5. Press the TV button to exit.




### Selecting VGA input

1. Press the MENU button.
2. Select "Tuning" with the arrow buttons and press the OK button.
3. Select "External units" with the arrow buttons and press the OK button.
4. Select "VGA COMPUTER" with the arrow buttons and press the TV button. (If "VGA COMPUTER" is not included in the list, select "Add new unit" by pressing the red button. Then select "Computer" with the arrow buttons and press the OK button.)




## Service adjustments

### Service mode activation

The receiver must be switched on or be in stand-by mode when activating the service mode.

1. Keep the ◢- (volume minus) button on **local control unit** pressed and at the same time start entering password: First MENU and then TV with the **remote control**. Release the ◢- button after the TV button has been pressed. If the receiver is in stand-by mode after the password was entered, switch on the receiver by pressing the TV button.
2. Activate the service mode by pressing the i button. The following adjustment menu appears on the screen:

The adjustment number and name, initializing value (left) and adjustment value (right) are shown in the menu.

3. Exit the service mode by pressing the TV button or logout by switching off the receiver with the mains switch.

*Note! Service mode activation stays enabled until the receiver is switched off with the mains switch.*

### Initialization of NVRAM (ICav19)

In case that the NVRAM is replaced, it must be initialized and configured.

1. Switch the receiver to stand-by mode. Keep the ◢- (volume minus) button on local control unit pressed and at the same time start entering password: MENU, TV and i with the remote control. Release ◢- button after the TV button is pressed.
2. Start the initialization by entering the key code: BLUE, 2, 5, 4 and OK. Initializing will take about 20 s. The receiver switches on automatically when the initializing is ready.
3. Activate the service mode by pressing the i button.
4. Press the RED button to pre-configure the receiver, see also chapter "Configuration and fault diagnostics". (check that the automatic configuration results in IIC DEV 1-4 and IF OPT bytes are corresponding to the actual configuration of the receiver).
5. Set manual option bytes (TXT OPT, SYS OPT 1 & 2 and DSP OPT) to correspond to the actual configuration of the receiver. Press the OK button to store the settings.
6. Switch off the receiver by pressing the mains switch.
7. Switch on the receiver by pressing the mains switch and tune one or more tv channels.
8. Activate the service mode and make the necessary service adjustments.
9. Switch off the receiver by pressing the mains switch.

# Service adjustments

### Configuration and fault diagnosis

The receiver must be configured after adding or removing any options. By pressing the RED button in service mode, the processor checks the configuration of the receiver and shows the settings on the screen. The configuration can be stored by pressing the OK button.

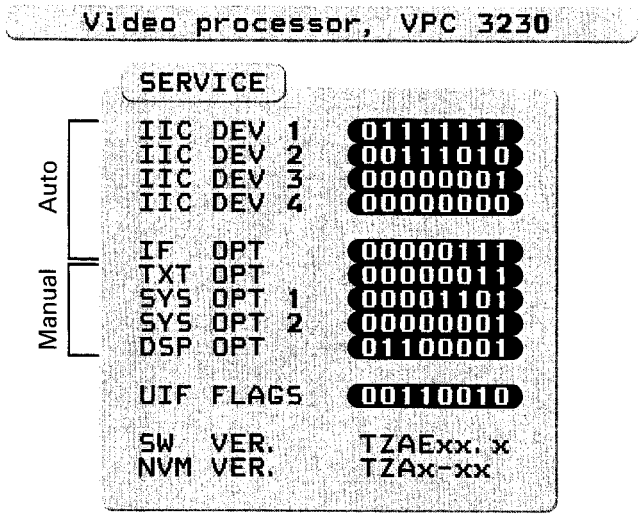
*Note! Disconnect Scart 3 and RCA (line out) cables before configuring the receiver.*

This feature can also be used in fault diagnosis. If an option bit is not '1' when it should be, the IC (or feature) is either not present or faulty.

*Note! IIC DEV 1-4 and IF OPT bytes are configured automatically every time the RED button is pressed. TXT OPT, SYS OPT 1 & 2, DSP OPT and UIF FLAGS bytes must be set manually.*

### Changing the option bytes

1. Select the configuration mode by pressing the RED button in the service mode.




*SW VER. = µP software version.*
*NVM VER. = NVRAM software version.*

2. Select IIC Device byte 1 - 4, Option byte 1 - 5 or Uif flags byte with the arrow buttons (up/down).

3. The name of a responding bit can be seen when using the arrow buttons (up/down and left/right). The selected bit is shown highlighted.

4. Set / clear the bits with the number buttons (0 ... 7).

5. Store the settings by pressing the OK button.

6. Return to the normal service mode by pressing the RED button.

### Option byte description

| Bit | Description | Setting 7 6 5 4 3 2 1 0 | '1' | '0' |
|---|---|---|---|---|
| | **IIC DEV 1** | **01101111** | | |
| 0 | Video processor, VPC 3230 | | Yes | No |
| 1 | Scarabeus, SDA 9400 | | Yes | No |
| 2 | Deflection processor, DDP 3310 | | Yes | No |
| 3 | TV tuner | | Yes | No |
| 4 | Video switch, TEA6415C | | Yes | No |
| 5 | Video switch, TDA6417 | | Yes | No |
| 6 | Audio processor, MSP341xG | | Yes | No |
| 7 | Subwoofer | | Yes | No |
| | **IIC DEV 2** | **00111010** | | |
| 0 | Surround audio proc., MSP 3411G | | Yes | No |
| 1 | Megatext, SDA5275-3 | | Yes | No |
| 2 | 4 Mb text memory | | Yes | No |
| 3 | 16 Mb text memory | | Yes | No |
| 4 | 16:9 picture tube | | Yes | No |
| 5 | VGA connection | | Yes | No |
| 6 | PIP processor, SDA9489/9589 | | Yes | No |
| 7 | PIP tuner | | Yes | No |
| | **IIC DEV 3** | **00000001** | | |
| 0 | Ext 3 installed | | Yes | No |
| 1 | Lineout module installed | | Yes | No |
| 2 | DDP F6 or newer | | Yes | No |
| 3...7 | Free | | Yes | No |
| | **IIC DEV 4** | **00000000** | | |
| 0...7 | Free | | Yes | No |
| | **IF OPT** | **00000000** | | |
| 0 | B/G IF | | Yes | No |
| 1 | I IF | | Yes | No |
| 2 | D/K IF | | Yes | No |
| 3 | L/L' IF | | Yes | No |
| 4 | Reserved (Set to 1, not used) | | Yes | No |
| 5 | Reservation for NTSC M | | Yes | No |
| 6...7 | Free | | Yes | No |
| | **TXT OPT** | **00000011** | | |
| 0 | TOP enabled | | Yes | No |
| 1 | FLOF enabled | | Yes | No |
| 2...4 | Free | | Yes | No |
| 5 | EPG enabled | | Yes | No |
| 6 | EPG record enabled | | Yes | No |
| 7 | Free | | Yes | No |
| | **SYS OPT 1** | **00001101** | | |
| 0 | A/V connector installed | | Yes | No |
| 1 | E1 RGB disabled on other programs | | Yes | No |
| 2 | ACI enabled | | Yes | No |
| 3 | Carrier mute enabled | | Yes | No |
| 4 | Loudness enabled | | Yes | No |
| 5...7 | Free | | Yes | No |
| | **SYS OPT 2** | **00000001** | | |
| 0 | Tilt adjustment | | Yes | No |
| 1 | Start with hotel | | Yes | No |
| 2...6 | Free | | Yes | No |
| 7 | Hotel features enabled | | Yes | No |
| | **DSP OPT** | **00110001** | | |
| 0 | Subwoofer bit 0 | | Yes | No |
| 1 | Subwoofer bit 1 | | Yes | No |
| 2 | Lineout level Fixed | | Yes | No |
| 3 | Lineout state virtual | | Yes | No |
| 4...7 | Free | | Yes | No |
| | **UIF FLAGS** | **00110010** | | |
| 0-2 | Logo bit<br>000 = no logo, go direct to APSi<br>001 = no logo, go to language menu<br>011 = Finlux logo<br>100 = Salora logo<br>101 = Luxor logo | | | |
| 3 | First time start up | | Yes | No |
| 4 | Volume bar display ON | | Yes | No |
| 5 | Program info display ON | | Yes | No |
| 6 | Front panel lock ON | | Yes | No |
| 7 | Off timer active | | Yes | No |

# Service adjustments via I²C-bus

**Remote control buttons in service mode**
When the receiver is in the service mode you can select the normal TV mode by pressing the TV button and return to the service mode by pressing the i button. The number and the arrow buttons are used for service adjustments. The OK button stores the settings.

**Adjustments for different picture formats**
Make all adjustments with a PAL signal unless otherwise mentioned. Make 4:3 set adjustments with normal 4:3 (classic) picture format and 16:9 set adjustments with wide (16:9) picture format. Then make the necessary adjustments with other picture formats/signals. The required adjustments are shown in the table below.

*Note! Check the configuration of the receiver before making the adjustments and make only the necessary adjustments.*

**Making the service adjustment**
1. Give a two digit code which determines an adjustment (e.g. 04 = width, see the following tables) with the number buttons or select an adjustment stepping with the arrow buttons (up/down).

*Note! Power supply and Ug2 adjustments must be done before picture geometry adjustments.*

2. Adjust with the cursor buttons (left/right).

3. Store the new value by pressing the OK button.

*Note!*
- *To avoid incomplete adjustments store each adjustment in the memory immediately after an adjustment has been made.*
- *If an adjustment has to be made separately for different picture format/signal, select first the normal TV mode by pressing the TV button and select then the desired picture format/signal. Return to service mode by pressing the i button.*

**Making the picture geometry adjustments**
To help the adjustment of geometry with living picture a red border appears around the deflection area of the picture. It can be switched ON/OFF with the MENU-button.

**Picture geometry adjustments**

| Adjustment | Code | OSD name | Classic (4:3) | Progressive scan 50 Hz 4:3 | Wide (16:9) | Progressive scan 50 Hz 16:9 | VGA 70 Hz | VGA 60 Hz | Note! |
|---|---|---|---|---|---|---|---|---|---|
| Vertical amplitude | 00 | V-AMPL. | X | X | | | X | X | |
| Vertical off-centre shift | 01 | V-SHIFT | X | X | | | X | X | |
| Vertical linearity | 02 | V-LINEARITY | X | X | | | X | | |
| Vertical S-correction | 03 | S-CORR. | X | X | | | X | | |
| Width | 04 | WIDTH | X | X | | | X | X | |
| Horizontal shift deflection | 05 | H-SHIFT | X | | | | | | Adjust deflection to center of screen (only in VGA sets). |
| Horizontal phase video | 06 | PHASE | X | | | | | | |
| Horizontal blanking | 07 | HOR BLANK | X | | | | | | First find the adjustment values where the blanking begins to come over the red area (left/right) and then adjust blanking to the middle of these adjustment values. |
| Parabola | 08 | PARABOLA | X | X | X | X | X | X | |
| Upper corners | 09 | CORNER UP | X | X | | | X | X | |
| Lower corners | 10 | CORNER LO | X | X | | | X | X | |
| Bow | 11 | BOW | X | X | | | X | | |
| Trapezium | 12 | TRAPEZIUM | X | X | | | X | | |
| Parallelogram distortion | 13 | ANGLE | X | X | | | X | | |

**Other adjustments**

| Adjustment | Code | OSD name | Note! |
|---|---|---|---|
| Screen grid voltage | 14 | G2 DISP. | Adjust the Ug2 until the display shows 180 ± 20.<br><br>*Note! Don't press the OK button if only Ug2 adjustment is needed.*<br><br>If the colour temperature adjustment is needed, start it here by pressing the OK button. This restores the default value of codes 14...19 and locks the reference value (17...19) of the highest gun. |
| Red gain | 15 | R GAIN | This procedure is necessary e.g. when the picture tube,CRT-module etc. has been replaced.<br>First adjust the GAIN values (white area to 80 nit) and then REF values (dark area to 1.5 nit). Check then GAIN values again and adjust them again if needed.<br>Adjusting: Pressing the MENU button changes gray-picture / external-picture and pressing the GREEN and the YELLOW button changes the contrast / brightness value. |
| Green gain | 16 | G GAIN | |
| Blue gain | 17 | B GAIN | |
| Red reference | 18 | R REF. | |
| Green reference | 19 | G REF. | |
| Blue reference | 20 | B REF. | |
| VPU clock oscillator | 21 | VCO | This adjustment is automatic, normally just press the OK button to store the value. If display shows 9999, the adjustment couldn't work and a repair is needed. *Note! Use standard 50Hz signal!* |
| High voltage limitation | 22 | EHT PROT | Adjust the value upwards until the TV picture becomes blanked. At the same time the value will be decreased automatically with 60 steps. After that press the OK button to store the adjustment. |

**Variable adjustments**

| Adjustment | Code | OSD name | Note! |
|---|---|---|---|
| BCL (beam current limitation) threshold | 23 | BCL THRES | Picture tube related default values are given in separate info (CRT dependant adjustments). |
| BCL time constant | 24 | BCL TC | |
| BCL gain | 25 | BCL GAIN | |
| EHT compensation for H-amplitude | 26 | EHTH | |
| EHT compensation for H-phase | 27 | EHTH PHA | |
| Time constant for H-phase | 28 | EHTH TC | |
| EHT compensation for V-amplitude | 29 | EHTV | |
| Time constant for H/V-amplitude | 30 | EHTV TC | |
| Threshold for H/V-amplitude EHT corr. | 31 | EHT THRES | |
| Vertical compens. with higher beam currents | 32 | EHTV2 | |
| H-compensation with higher beam currents | 33 | EHTH2 | |
| Peak white limitation | 34 | Y MAX | |
| 2nd upper corners | 35 | CORN 2 UP | |
| 2nd lower corners | 36 | CORN 2 LO | |

DDP3310B-F6

# Service adjustments

## O Power supply block

**Supply voltage and protection circuit**

1. Set the brightness and the contrast to the normal level. Connect a universal voltmeter to the cathode of **Do16**.

2. Adjust the **U1 voltage** with **Po1**. The voltage depends on the picture tube type, refer to the section "Variable components".

3. Check the power overload protection after making any service operations in the primary circuit of the power supply. Switch off the receiver by pressing the mains button. Short circuit the capacitor **Co36** and keep the short circuit connected. Switch on the receiver by pressing the mains button. When the power overload protection works correctly, the power supply does not start (but tries to start). Switch off the receiver by pressing the mains button. Remove the short circuit and then switch on the receiver by pressing the mains button.

**Safety features**

Activation of the service mode disables the following features:

- Horizontal safety function (EHT)
- Start-up checking: Video processor **VPC 3230**, Scarabeus **SDA 9400** and Deflection processor **DDP 3310** fail to initialize correctly.

## K Horizontal deflection block

**Horizontal linearity**

Adjust with **Lk1**.

**Focusing**

Set the brightness and the contrast to the normal level. Use the crosshatch pattern and adjust the picture for optimum resolution.

**(Screen grid voltage) Ug2 voltage**

Ug2 voltage can easily be adjusted with help of the on screen display, see section "other adjustments" / screen grid voltage.

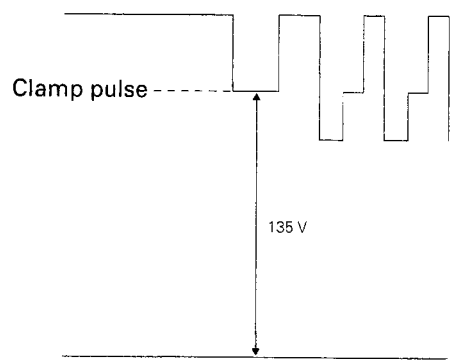
**Ug2 adjusting with oscilloscope:**

1. Set the brightness and the colour saturation to the normal level and the contrast to minimum.

2. At the end of the vertical blanking, there is a black current measurement pulse (clamp pulse) at **pin 9** of **ICh1**, **ICh2** and **ICh3**. Use an oscilloscope and find the output stage with the highest cut-off (i.e. the highest voltage during the black current measurement pulse).

3. Adjust the voltage of the clamp pulse to **+135 V** with Ug2 (see figure).

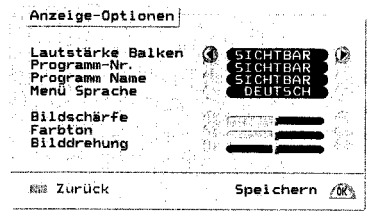
*Note! Adjust the voltage with a clamp pulse.*



# Bedienungsanleitung

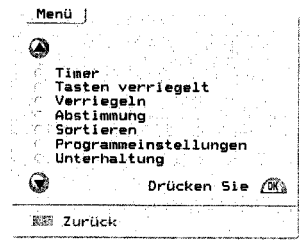
### Ändern der Menüsprache

1. Drücken Sie zur Wahl des Vision-Menüs die gelbe Taste.
2. Drücken Sie zur Wahl des Einstellmenüs für das Display die rote Taste.
3. Wählen Sie "Menüsprache" mit den Pfeiltasten (auf-/abwärts) und ändern Sie die Menüsprache mit den Pfeiltasten (links/rechts).
4. Zum Speichern der Änderungen drücken Sie die OK-Taste.



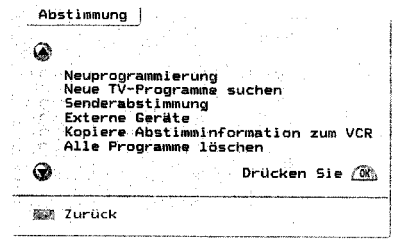

### Manuelle Abstimmung

1. Wählen Sie die Programmnummer, die Sie abstimmen möchten.
2. Drücken Sie die MENU-Taste.
3. Wählen Sie "Abstimmung" mit den Pfeiltasten (auf-/abwärts) und drücken Sie die OK-Taste.
4. Wählen Sie "Senderabstimmung" mit den Pfeiltasten (links/rechts) und drücken Sie die OK-Taste.
5. Drücken Sie die rote Taste (Kanalsuchlauf).
6. Zum Speichern drücken Sie die OK-Taste.
7. Drücken Sie zum Verlassen des Menüs die TV-Taste.



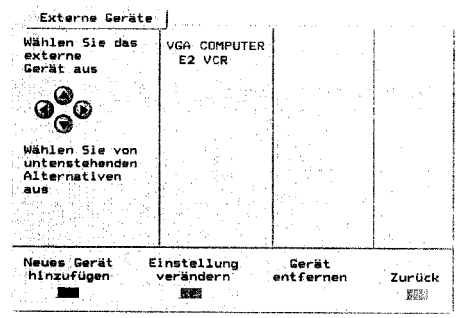

### APSi (Automatisches Programmiersystem)

1. Drücken Sie die MENU-Taste.
2. Wählen Sie "Abstimmung" mit den Pfeiltasten und drücken Sie die OK-Taste.
3. Wählen Sie "Neuprogrammierung" und drücken Sie die OK-Taste.
4. Zur Neuabstimmung der Kanäle drücken Sie die rote Taste.
5. Drücken Sie zum Verlassen des Menüs die TV-Taste.




### Wahl des VGA-Eingangs

1. Drücken Sie die MENU-Taste.
2. Wählen Sie "Abstimmung" mit den Pfeiltasten und drücken Sie die OK-Taste.
3. Wählen Sie "Externe Geräte" mit den Pfeiltasten und drücken Sie die OK-Taste.
4. Wählen Sie "VGA COMPUTER" mit den Pfeiltasten und drücken Sie die TV-Taste. (Wenn "VGA COMPUTER" nicht in der Liste enthalten ist, wählen Sie "Neues Gerät hinzufügen" durch Drücken der roten Taste. Wählen Sie anschließend mit den Pfeiltasten "Computer" und drücken Sie die TV-Taste.)




# Service-Einstellungen

### Aktivierung des Servicemodus

Bei Aktivierung des Servicemodus muss das Fernsehgerät eingeschaltet oder in Betriebsbereitschaft sein.

1. Halten Sie die ◢-Taste (Lautstärke verringern) an der **Bedieneinheit des Fernsehgerätes** gedrückt und geben Sie gleichzeitig mit der **Fernbedienung** MENU und dann TV als Kennwort ein. Lassen Sie die ◢-Taste los, nachdem Sie die TV-Taste gedrückt haben. Falls sich das Fernsehgerät nach Eingabe des Kennwortes in der Betriebsbereitschaft befindet, schalten Sie es durch Drücken der TV-Taste ein.
2. Aktivieren Sie den Servicemodus durch Drücken der i-Taste. Das folgende Einstellmenü erscheint auf dem Bildschirm:

Einstellzahl und -Name, Initialisierungs- (links) und Einstellwerte (rechts) werden in diesem Menü dargestellt.

3. Beenden Sie den Servicemodus durch Drücken der TV-Taste oder loggen Sie sich durch Ausschalten des Fernsehgerätes mit dem Hauptschalter aus.

*Hinweis: Die Aktivierung des Servicemodus bleibt solange bestehen, bis das Fernsehgerät mit dem Netzschalter ausgeschaltet wird*

### Initialisierung des NVRAM (ICav19)

Falls der NVRAM ausgetauscht worden ist, muß er initialisiert und konfiguriert werden.

1. Schalten Sie das Fernsehgerät in die Betriebsbereitschaft. Halten Sie die ◢-Taste (Lautstärke verringern) an der Bedieneinheit des Fernsehgerätes gedrückt und geben Sie gleichzeitig mit der Fernbedienung MENU, TV und i als Kennwort ein. Lassen Sie die ◢-Taste los, nachdem Sie die TV-Taste gedrückt haben.
2. Starten Sie die Initialisierung durch Eingabe des Schlüsselcodes: BLAU, 2, 5, 4 und OK. Die Initialisierung dauert etwa 20 Sekunden. Das Fernsehgerät schaltet sich bei erfolgter Initialisierung automatisch ein.
3. Aktivieren Sie den Servicemodus durch Drücken der i-Taste.
4. Drücken Sie zur Vorkonfiguration des Fernsehgerätes die rote Taste, siehe auch Kapitel "Konfiguration und Fehlerdiagnose". (Stellen Sie sicher, daß die automatische Konfiguration IIC DEV 1-4 ergibt und die IF OPT-Bytes der aktuellen Konfiguration des Fernsehgerätes entsprechen.)
5. Stellen Sie die manuellen Optionsbytes (TEXT OPT, SYS OPT 1 & 2 und DSP OPT) ein, damit diese der aktuellen Konfiguration des Fernsehgerätes entsprechen. Speichern Sie die Einstellungen durch Drücken der OK-Taste.

# Service-Einstellungen

6. Schalten Sie das Fernsehgerät mit dem Netzschalter aus.
7. Schalten Sie das Fernsehgerät mit dem Netzschalter ein und stellen Sie einen oder mehrere Fernsehkanäle ein.
8. Aktivieren Sie den Servicemodus und führen Sie die nötigen Serviceeinstellungen durch.
9. Schalten Sie das Fernsehgerät mit dem Netzschalter aus.

### Konfiguration und Fehlerdiagnose

Das Fernsehgerät muß nach Hinzufügen oder Entfernen von Optionen konfiguriert werden. Bei Drücken der roten Taste im Servicemodus überprüft der Prozessor die Konfiguration des Fernsehgerätes und zeigt die Einstellungen auf dem Bildschirm. Die Konfiguration kann durch Drücken der OK-Taste gespeichert werden.

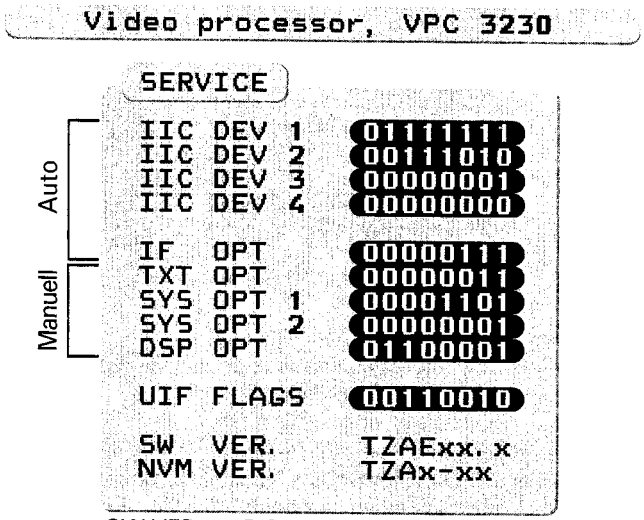
*Achtung! Ziehen Sie vor Konfiguration des Fernsehgerätes das Scart 3-Kabel und das RCA-Kabel (Zeilen) heraus.*

Dieses Feature kann auch bei der Fehlerdiagnose verwendet werden. Wenn ein Optionsbit nicht wie vorgesehen '1' ist, ist der IC (oder das Feature) entweder nicht vorhanden oder fehlerhaft.

*Hinweis: IIC DEV 1 - 4 und die IF OPT-Bytes werden immer bei Drücken der roten Taste automatisch konfiguriert. TXT OPT, SYS OPT 1 & 2, DSP OPT und die UIF FLAGS-Bytes müssen manuell eingestellt werden.*

### Ändern der Optionsbytes

1. Wählen Sie den Konfigurationsmodus durch Drücken der roten Taste im Servicemodus.




*SW VER. = µP Softwareversion.*
*NVM VER. = NVRAM Softwareversion.*

2. Wählen Sie das IIC Device-Byte 1 - 4, das Option-Byte 1 - 5 oder das UIF Flags-Byte mit den Pfeiltasten (auf-/abwärts).
3. Der Name eines zugehörigen Bits wird bei Benutzung der Pfeiltasten (auf-/abwärts und links/rechts) sichtbar. Das gewählte Bit erscheint hervorgehoben.
4. Die Einstellung bzw. das Löschen der Bits erfolgt mit den Zifferntasten (0 ... 7).
5. Speichern Sie die Einstellungen durch Drücken der OK-Taste.
6. Gehen Sie durch Drücken der roten Taste in den normalen Servicemodus zurück.

### Beschreibung der Option-Bytes

| Bit | Beschreibung | Einstellung 7 6 5 4 3 2 1 0 | '1' | '0' |
|---|---|---|---|---|
| | **IIC DEV 1** | **01101111** | | |
| 0 | Videoprozessor, VPC 3230 | | Ja | Nein |
| 1 | Skarabäus, SDA 9400 | | Ja | Nein |
| 2 | Ablenkungsprozessor, DDP 3310 | | Ja | Nein |
| 3 | TV Tuner | | Ja | Nein |
| 4 | Videoschalter, TEA6415C | | Ja | Nein |
| 5 | Videoschalter, TDA6417 | | Ja | Nein |
| 6 | Surround Audioprozessor, MSP341XG | | Ja | Nein |
| 7 | Subwoofer | | Ja | Nein |
| | **IIC DEV 2** | **00111010** | | |
| 0 | Audioprozessor, MSP 3411G | | Ja | Nein |
| 1 | Megatext, SDA5275-3 | | Ja | Nein |
| 2 | 4 Mb Textspeicher | | Ja | Nein |
| 3 | 16 Mb Textspeicher | | Ja | Nein |
| 4 | 16:9 Bildröhre | | Ja | Nein |
| 5 | VGA-Anschluß | | Ja | Nein |
| 6 | PIP Prozessor, SDA9489/9589 | | Ja | Nein |
| 7 | PIP Tuner | | Ja | Nein |
| | **IIC DEV 3** | **00000001** | | |
| 0 | Ext 3 installiert | | Ja | Nein |
| 1 | Zeilenmodul installiert | | Ja | Nein |
| 2 | DDP F6 oder neuer | | Ja | Nein |
| 3...7 | Frei | | Ja | Nein |
| | **IIC DEV 4** | **00000000** | | |
| 0...7 | Frei | | Ja | Nein |
| | **IF OPT** | **00000000** | | |
| 0 | B/G IF | | Ja | Nein |
| 1 | I IF | | Ja | Nein |
| 2 | D/K IF | | Ja | Nein |
| 3 | L/L' IF | | Ja | Nein |
| 4 | Reserviert (auf 1 eingestellt, nicht verwendet) | | Ja | Nein |
| 5 | Reserviert für NTSC M | | Ja | Nein |
| 6...7 | Frei | | Ja | Nein |
| | **TXT OPT** | **00000011** | | |
| 0 | TOP aktiviert | | Ja | Nein |
| 1 | FLOF aktiviert | | Ja | Nein |
| 2...4 | Frei | | Ja | Nein |
| 5 | EPG aktiviert | | Ja | Nein |
| 6 | EPG-Aufnahme aktiviert | | Ja | Nein |
| 7 | Frei | | Ja | Nein |
| | **SYS OPT 1** | **00001101** | | |
| 0 | A/V-Anschluß installiert | | Ja | Nein |
| 1 | E1 RGB nicht aktiviert bei anderen Programmen | | Ja | Nein |
| 2 | ACI aktiviert | | Ja | Nein |
| 3 | Tonträger-Stummschaltung aktiviert | | Ja | Nein |
| 4 | Lautstärke aktiviert | | Ja | Nein |
| 5...7 | Frei | | Ja | Nein |
| | **SYS OPT 2** | **00000001** | | |
| 0 | Einstellung Bildneigung | | Ja | Nein |
| 1 | Start Hotelmodus | | Ja | Nein |
| 2...6 | Frei | | Ja | Nein |
| 7 | Hotelfeatures aktiviert | | Ja | Nein |
| | **DSP OPT** | **00110001** | | |
| 0 | Subwoofer bit 0 | | Ja | Nein |
| 1 | Subwoofer bit 1 | | Ja | Nein |
| 2 | Ausgangslevel festgesetzt | | Ja | Nein |
| 3 | Virtueller Zeilenstatus | | Ja | Nein |
| 4...7 | Frei | | Ja | Nein |
| | **UIF FLAGS** | **00110010** | | |
| 0-2 | Logo bit<br>000 = Kein Logo, gehe direkt zum APSi<br>001 = Kein Logo, gehe zum Sprachmenü<br>011 = Finlux Logo<br>100 = Salora Logo<br>101 = Luxor Logo | | | |
| 3 | Erstinbetriebnahme | | Ja | Nein |
| 4 | Lautstärkeanzeige EIN | | Ja | Nein |
| 5 | Programmanzeige EIN | | Ja | Nein |
| 6 | Kindersicherung EIN | | Ja | Nein |
| 7 | Off Timer aktiviert | | Ja | Nein |

# Service-Einstellungen über den I2C-Bus

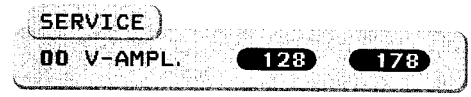
**Tasten der Fernbedienung im Servicemodus**
Befindet sich das Fernsehgerät im Servicemodus, können Sie durch Drücken der TV-Taste in den normalen Fernsehbetrieb gehen und durch Drücken der i-Taste in den Servicemodus zurückgehen.
Ziffern- und Pfeiltasten werden für Serviceeinstellungen verwendet. Mit der OK-Taste werden die Einstellungen gespeichert.

**Einstellungen für verschiedene Bildformate**
Wenn nicht anders vermerkt, werden alle Einstellungen mit einem PAL-Signal durchgeführt. Führen Sie Einstellungen im Format 4:3 bei normalem 4:3 Bildformat (klassisch) und Einstellungen im Format 16:9 bei Breitbildformat durch. Anschließend werden die erforderlichen Einstellungen bei anderen Bildformaten bzw. Signalen vorgenommen. Die notwendigen Einstellungen sind unten in der Tabelle aufgeführt.

*Hinweis: Überprüfen Sie die Konfiguration des Fernsehgerätes, bevor die Einstellungen durchgeführt werden; führen Sie nur die erforderlichen Einstellungen durch.*

**Durchführung einer Serviceeinstellung**
1. Geben Sie einen zweistelligen Code mit den Zifferntasten ein, der die Einstellung bestimmt (z.B. 04 = Bildweite, siehe nachfolgende Tabellen) oder wählen Sie die Einstellung mit den Pfeiltasten (aufwärts/abwärts).

*Hinweis: Einstellungen am Netzteil und an UG2 müssen vor den Einstellungen der Bildgeometrie durchgeführt werden.*




2. Nehmen Sie die Einstellung mit den Pfeiltasten (links/rechts) vor.
3. Speichern Sie den neuen Wert durch Drücken der OK-Taste.

*Achtung!*
- *Um unvollständige Einstellungen zu vermeiden, speichern Sie jede Einstellung direkt nach ihrer Durchführung ab.*
- *Falls eine Einstellung bei verschiedenen Bildformaten bzw. Signalen durchgeführt werden muß, wählen Sie zuerst durch Drücken der TV-Taste den normalen Betrieb und wählen dann das gewünschte Bildformat bzw. Signal. Durch Drücken der i-Taste gehen Sie in den Servicemodus zurück.*

**Einstellungen der Bildgeometrie**
Um die Einstellung der Bildgeometrie bei bewegtem Bild zu vereinfachen, erscheint ein roter Rahmen um die Ablenkfläche des Bildes.
Er kann mit der MENU-Taste auf EIN bzw. AUS geschaltet werden.

**Einstellungen der Bildgeometrie**

| Einstellung | Code | Name im Display | Classic (4:3) | Progressives Scannen 50Hz 4:3 | Weitformat (16:9) | Progressives Scannen 50Hz 16:9 | VGA 70 Hz | VGA 60 Hz | Hinweis! |
|---|---|---|---|---|---|---|---|---|---|
| Vertikalamplitude | 00 | V-AMPL. | X | X | | | X | X | |
| Vertikale Außermittenverchiebung | 01 | V-SHIFT | X | X | | | X | X | |
| Vertikale Linearität | 02 | V-LINEARITY | X | X | | | X | | |
| Vertikale S-Korrektur | 03 | S-CORR. | X | X | | | X | | |
| Weite | 04 | WIDTH | X | X | | | X | X | |
| Horizontalablenkung | 05 | H-SHIFT | X | | | | | | Stellen Sie die Ablenkung auf die Mitte des Bildschirmes ein (nur bei VGA-Geräten). |
| Horizontalphase Video | 06 | PHASE | X | | | | | | |
| Horizontales Austasten | 07 | HOR BLANK | X | | | | | | Suchen Sie zuerst die Einstellwerte (rechts/links), wo die Austastung sich auf den roten Bereich zu verschieben beginnt. Stellen Sie dann Austastung auf die Mitte von diesen instellwerten ein. |
| Parabel | 08 | PARABOLA | X | X | X | X | X | X | |
| Obere Ecken | 09 | CORNER UP | X | X | | | X | X | |
| Untere Ecken | 10 | CORNER LO | X | X | | | X | X | |
| Bogen | 11 | BOW | X | X | | | X | | |
| Trapez | 12 | TRAPEZIUM | X | X | | | X | | |
| Parallelogrammverzerrung | 13 | ANGLE | X | X | | | X | | |

**Andere Einstellungen**

| Einstellung | Code | Name im Display | Hinweis! |
|---|---|---|---|
| Schirmgitterspannung | 14 | G2 DISP. | Stellen Sie Ug2 ein, bis das das Display einen Wert von 180 ±20 zeigt.<br><br>*Hinweis: Drücken Sie nicht die OK-Taste, wenn nur die Einstellung von Ug2 erforderlich ist.*<br><br>Wenn die Einstellung der Farbtemperatur erforderlich ist, starten Sie den Vorgang durch Drücken der OK-Taste. Dieses korrigiert den fehlerhaften Wert der Codes 14 - 19 und sichert den Referenzwert (17 - 19) der Strahlkanone für die höchsten Werte. |
| Rotverstärkung<br>Grünverstärkung<br>Blauverstärkung<br><br>Rotreferenz<br>Grünreferenz<br>Blaureferenz | 15<br>16<br>17<br><br>18<br>19<br>20 | R GAIN<br>G GAIN<br>B GAIN<br><br>R REF.<br>G REF.<br>B REF. | Dieser Vorgang ist z.B. bei ausgetauschter Bildröhre oder CRT-Modul usw. notwendig. Stellen Sie zuerst die Verstärkungswerte (weiße Fläche bis 80 Nit) und anschließend die Referenzwerte (dunkle Fläche bis 1.5 Nit) ein. Prüfen Sie noch einmal die Verstärkungswerte und stellen Sie diese erneut ein, falls erforderlich.<br>Einstellen: Drücken der MENU-Taste verändert das Graustufenbild/ externes Bild und Drücken der grünen und gelben Taste verändert den Wert für Kontrast/Helligkeit. |
| VPU-Taktgeber | 21 | VCO | Diese Einstellung erfolgt automatisch und im Normalfall wird der Wert durch Drücken der OK-Taste gespeichert. Wenn das Display 9999 anzeigt, kann die Einstellung nicht erfolgen und es wird eine Reparatur erforderlich. *Hinweis: Verwenden Sie ein Standardsignal von 50 Hz!* |
| Hochspannungsbegrenzung | 22 | EHT PROT | Stellen Sie den Wert so hoch ein, bis das Fernsehbild ausgetastet wird. Gleichzeitig wird der Wert automatisch in 60 Schritten abgesenkt. Drücken Sie danach die OK-Taste, um den Wert zu speichern. |

**Variable Einstellungen**

| Einstellung | Code | Name im Display | Hinweis! |
|---|---|---|---|
| BCL-Schwellwert (Strahlstrombegrenzung) | 23 | BCL THRES | Für Standardwerte der Bildröhre siehe separate Hinweise (CRT dependant adjustments) |
| BCL-Zeitkonstante | 24 | BCL TC | |
| BCL-Verstärkung | 25 | BCL GAIN | |
| EHT-Ausgleich für Horizontalamplitude | 26 | EHTH | |
| EHT-Ausgleich für Horizontalphase | 27 | EHTH PHA | |
| Zeitkonstante für Horizontalphase | 28 | EHTH TC | |
| EHT-Ausgleich für Vertikalamplitude | 29 | EHTV | |
| Zeitkonstante für H/V-Amplitude | 30 | EHTV TC | |
| Schwellwert für H/V-Amplitude/EHT-Korrektur | 31 | EHT THRES | |
| Vertikalausgleich bei höheren Strahlströmen | 32 | EHTV2 | |
| Horizontalausgleich bei höheren Strahlströmen | 33 | EHTH2 | |
| Weißspitzenbegrenzung | 34 | Y MAX | |
| Zweite obere Ecken | 35 | CORN 2 UP | |
| Zweite untere Ecken | 36 | CORN 2 LO | |

DDP3310B-F6

# Service-Einstellungen

## O Netzteil

**Versorgungsspannung und Schutzschaltung**

1. Stellen Sie Helligkeit und Kontrast auf den normalen Wert ein. Schließen Sie ein Universal-Voltmeter an der Kathode von **Do16** an.

2. Stellen Sie die **Spannung U1** mit **Po1** ein. Die Spannung ist vom Bildröhrentyp abhängig, siehe auch Abschnitt "Variable Bauteile".

3. Prüfen sie den Überleistungsschutz nach Durchführung von Servicearbeiten im primären Schaltkreis der Stromversorgung. Schalten sie das Fernsehgerät durch Drücken des Netzschalters aus. Schließen Sie den Kondensator **Co36** kurz und lassen sie die Kurzschlußverbindung bestehen. Wenn der Überleistungsschutz richtig arbeitet, startet die Stromversorgung nicht (aber versucht zu starten). Schalten sie das Fernsehgerät durch Drücken des Netzschalters aus. Entfernen Sie die Kurzschlußschaltung und schalten Sie das Fernsehgerät durch Drücken des Netzschalters ein.

**Sicherheitsfeatures**

Die Aktivierung des Servicemodus setzt folgende Features außer Betrieb:

- Horizontale Sicherheitsfunktion (EHT)
- Kontrolle bei Inbetriebnahme: Videoprozessor **VPC 3230**, Skarabäus **SDA 9400** und Ablenkungsprozessor **DDP 3310** können nicht korrekt initialisieren.

## O Horizontaler Ablenkungsblock

**Horizontale Linearität**

Mit **Lk1** einstellen.

**Fokussierung**

Stellen Sie Helligkeit und Kontrast auf den normalen Wert ein. Wählen Sie die Kreuzschraffur und stellen Sie das Bild auf die optimale Auflösung ein.

**(Schirmgitterspannung) Spannung Ug2**

Die Spannung Ug2 kann leicht mit Hilfe des Bildschirmdisplays eingestellt werden, siehe Abschnitt "Andere Einstellungen" / Schirmgitterspannung.

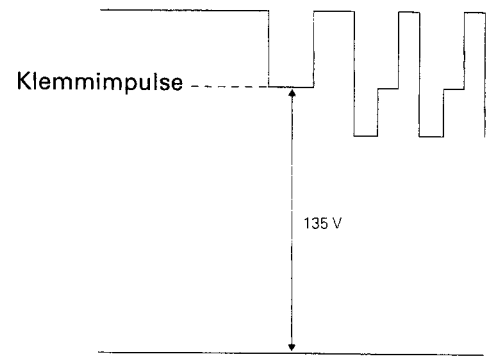
**Einstellen von Ug2 mit dem Oszilloskop**

1. Stellen Sie Helligkeit und Farbsättigung auf den normalen Wert und den Kontrast auf ein Minimum ein.

2. Am Ende der vertikalen Austastung liegt ein Schwarzstrom-Meßimpuls (Klemmimpuls) am **Pin 9** bei **ICh1**, **ICh2** und **ICh3** vor. Benutzen Sie ein Oszilloskop und ermitteln Sie die Ausgangsstufe mit dem höchsten Abschaltwert (der höchste Spannungswert während des Schwarzstrom-Meßimpulses).

3. Stellen Sie die Spannung am Klemmimpuls auf **+135 V** mit Ug2 ein (siehe Abbildung).

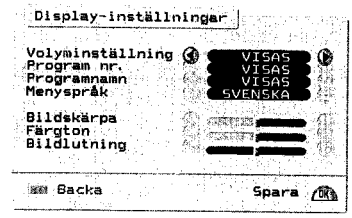
*Hinweis: Stellen Sie die Spannung mit einem Klemmimpuls ein.*



# Bruksanvisning

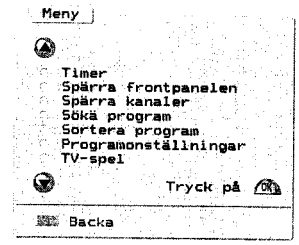
### Ändring av menyspråk

1. Välj Önskebild-menyn genom att trycka på den gula knappen.
2. Välj Display-inställningar genom att trycka på den röda knappen.
3. Välj Menyspråk med pilknapparna (upp/ned) och ändra menyspråket med pilknapparna (vänster/höger).
4. Tryck på OK för att spara ändringen.



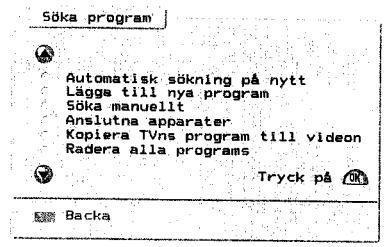

### Manuell avstämning

1. Välj programnumret du vill avstämma.
2. Tryck på MENU-knappen.
3. Välj "Söka program" med pilknapparna (upp/ned) och tryck på OK-knappen.
4. Välj "Söka manuellt" med pilknapparna (upp/ned) och tryck på OK-knappen.
5. Tryck på den röda knappen (Kanalsökning).
6. Tryck på OK för att spara.
7. Tryck på TV för att lämna läget.



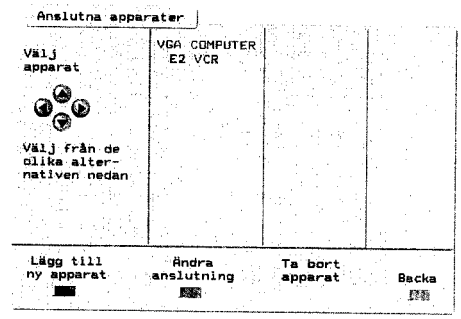

### APSi (Automatic Programming System)

1. Tryck på MENU-knappen.
2. Välj "Söka program " med pilknapparna (upp/ned) och tryck på OK-knappen.
3. Välj "Automatisk sökning på nytt" och tryck på OK-knappen.
4. För att ställa in kanaler, tryck på den röda knappen.
5. Tryck på TV för att lämna läget.




### Val av VGA-ingång

1. Tryck på MENU-knappen.
2. Välj "Söka program " med pilknapparna (upp/ned) och tryck på OK-knappen.
3. Välj "Anslutna apparater" med pilknapparna (upp/ned) och tryck på OK-knappen.
4. Välj "VGA COMPUTER" med pilknapparna och tryck på TV-knappen. (Ingår "VGA COMPUTER" inte i listan, välj "Lägg till ny apparat" genom att trycka på den röda knappen. Välj därefter "Dator" med pilknapparna och tryck på OK-knappen.)




# Service-inställningar

### Aktivering av service-läget

Mottagaren måste vara påslagen eller i beredskapsläge när man aktiverar service-läget.

1. Håll **frontpanelens** ◢- (volym minus) knapp intryckt och mata samtidigt in lösenordet: Tryck först på MENU och därefter på TV på **fjärrkontrollen**. Frigör ◢- knappen efter att du har tryckt på TV-knappen. Är mottagaren i beredskapsläge efter att lösenordet är inmatat, slå på mottagaren genom att trycka på TV-knappen.
2. Aktivera service-läget genom att trycka på i-knappen. Följande inställning visas på bildskärmen:

Inställningens nummer och namn, initialiseringsvärde (vänster) och justervärde (höger) visas på menyn.

3. Lämna service-läget genom att trycka på TV-knappen eller kvittera ut dig från service-läget genom att stänga av mottagaren med huvudströmbrytaren.

*Obs! Service-läget är tillgänglig tills mottagaren stängs av med huvudströmbrytaren.*

### Initialisering av NVRAM (ICav19)

Ifall NVRAM:en är utbytt, måste den initialiseras och konfigureras.

1. Ställ mottagaren i beredskapsläge. Håll frontpanelens ◢- (volym minus) knapp intryckt och mata samtidigt in lösenordet: Mata in MENU, TV och i med fjärrkontrollen. Frigör ◢-knappen efter att du har tryckt på TV-knappen.
2. Starta initialiseringen genom att mata in nyckelordet: BLÅ, 2, 5, 4 och OK. Initialiseringen tar ca. 20 s. Mottagaren slås automatiskt på när initialiseringen är utförd.
3. Aktivera service-läget genom att trycka på i-knappen.
4. Tryck på den RÖDA knappen för att förkonfigurera mottagaren. Se också avsnitt "Konfigurering och felsökning". (Kontrollera att resultatet av den automatiska konfigureringen av IIC DEV 1-4 och IF OPT byte motsvarar den aktuella konfigureringen för mottagaren).
5. Ställ in manuella optionbytes (TXT OPT, SYS OPT 1 & 2 och DSP OPT) till att motsvara den aktuella konfigureringen för mottagaren. Tryck på OK-knappen för att spara inställningen.
6. Stäng av mottagaren med huvudströmbrytaren.
7. Slå på mottagaren med huvudströmbrytaren och ställ in en eller flera tv-kanaler.
8. Aktivera service-läget och gör nödvändiga service-justeringar.
9. Stäng av mottagaren med huvudströmbrytaren.

# Service-inställningar

## Konfigurering och felsökning

Mottagaren måste konfigureras när man lägger till eller tar bort egenskaper. Genom att trycka på den RÖDA knappen i service-läge, kontrollerar processorn mottagarens konfiguration och visar inställningen på bildskärmen. Konfigurationen kan sparas genom att trycka på OK-knappen.

*Obs! Koppla ur Scart 3 och RCA (linjeutgång) kablar före du konfigurerar mottagaren.*

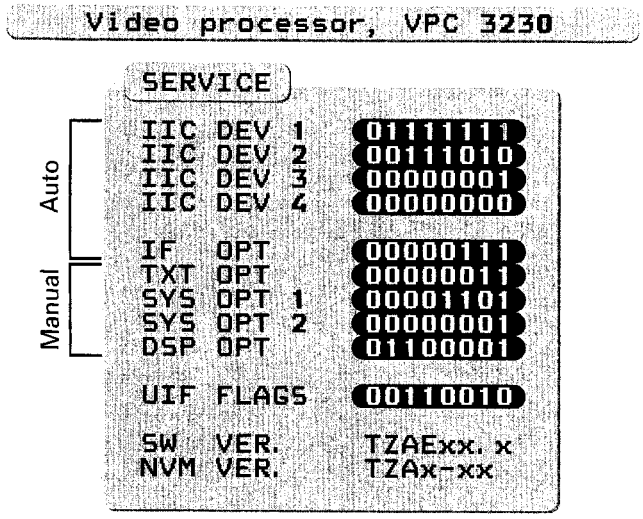
Denna egenskap kan också användas till felsökning. Om en option bit inte är '1' när den skall vara det, saknas en IC (eller egenskapen) eller så är den defekt.

*Obs! IIC DEV 1-4 och IF OPT byterna konfigureras automatiskt varje gång man trycker på den RÖDA-knappen.*

TXT OPT, SYS OPT 1 & 2, DSP OPT och UIF FLAGS byterna måste ställas in manuellt.

## Ändring av option-bytes

1. Välj konfigurerings-läge genom att trycka på den RÖDA-knappen i service-läget.




*SW VER. = µP programversion.*
*NVM VER. = NVRAM programversion.*

2. Välj IIC Device byte 1 - 4, Option byte 1 - 5 eller Uif flags byte med pilknapparna (upp/nedåt).

3. Namnet på gällande bit visas när man använder pilknapparna (upp/nedåt och vänster/höger). Vald bit visas "upplyst".

4. Sätt på / stäng av bitarna med sifferknapparna (0 ... 7).

5. Spara inställningen med OK-knappen.

6. Återgå till normalt service-läge genom att trycka på den RÖDA knappen.

## Option byte förklaringar

| Bit | Förklaring | Inställning 7 6 5 4 3 2 1 0 | '1' | '0' |
|---|---|---|---|---|
| | **IIC DEV 1** | **01101111** | | |
| 0 | Videoprocessor VPC 3230 | | Ja | Nej |
| 1 | Scarabeus SDA 9400 | | Ja | Nej |
| 2 | Avlänkningsprocessor DDP 3310 | | Ja | Nej |
| 3 | TV-tuner | | Ja | Nej |
| 4 | Videoswitch, TEA6415C | | Ja | Nej |
| 5 | Videoswitch, TDA6417 | | Ja | Nej |
| 6 | Audio processor MSP341XG | | Ja | Nej |
| 7 | Subwoofer | | Ja | Nej |
| | **IIC DEV 2** | **00111010** | | |
| 0 | Audioprocessor MSP 3411G | | Ja | Nej |
| 1 | Megatext SDA5275-3 | | Ja | Nej |
| 2 | 4 Mb textminne | | Ja | Nej |
| 3 | 16 Mb textminne | | Ja | Nej |
| 4 | 16:9 bildrör | | Ja | Nej |
| 5 | VGA-anslutning | | Ja | Nej |
| 6 | PIP-processor, SDA9489/9589 | | Ja | Nej |
| 7 | PIP-tuner | | Ja | Nej |
| | **IIC DEV 3** | **00000001** | | |
| 0 | Ext 3 | | Ja | Nej |
| 1 | Linjeutgångsmodulen monterad | | Ja | Nej |
| 2 | DDP F6 eller nyare | | Ja | Nej |
| 3...7 | Fri | | Ja | Nej |
| | **IIC DEV 4** | **00000000** | | |
| 0...7 | Fri | | Ja | Nej |
| | **IF OPT** | **00000000** | | |
| 0 | B/G norm | | Ja | Nej |
| 1 | I norm | | Ja | Nej |
| 2 | D/K norm | | Ja | Nej |
| 3 | L/L' norm | | Ja | Nej |
| 4 | Reserverad (Sätt till 1, används inte | | Ja | Nej |
| 5 | Reserverad för NTSC M | | Ja | Nej |
| 6...7 | Fri | | Ja | Nej |
| | **TXT OPT** | **00000011** | | |
| 0 | TOP | | Ja | Nej |
| 1 | FLOF | | Ja | Nej |
| 2...4 | Fri | | Ja | Nej |
| 5 | EPG | | Ja | Nej |
| 6 | EPG-inspelning | | Ja | Nej |
| 7 | Fri | | Ja | Nej |
| | **SYS OPT 1** | **00001101** | | |
| 0 | A/V-anslutning | | Ja | Nej |
| 1 | E1 RGB spärrad på andra programplatse | | Ja | Nej |
| 2 | ACI | | Ja | Nej |
| 3 | Bärvågsspärr | | Ja | Nej |
| 4 | Loudness | | Ja | Nej |
| 5...7 | Fri | | Ja | Nej |
| | **SYS OPT 2** | **00000001** | | |
| 0 | Bildlutnings-justering | | Ja | Nej |
| 1 | Autostart (hotell-tv) | | Ja | Nej |
| 2...6 | Fri | | Ja | Nej |
| 7 | Hotell-tv | | Ja | Nej |
| | **DSP OPT** | **00110001** | | |
| 0 | Subwoofer bit 0 | | Ja | Nej |
| 1 | Subwoofer bit 1 | | Ja | Nej |
| 2 | Fixerad-linjeutgångsnivå | | Ja | Nej |
| 3 | Linjeutgångsläge virtual | | Ja | Nej |
| 4...7 | Fri | | Ja | Nej |
| | **UIF FLAGS** | **00110010** | | |
| 0-2 | Logo bit<br>000 = ingen logo, direkt till APSi<br>001 = ingen logo, direkt till språkmenyn<br>011 = Finlux logo<br>100 = Salora logo<br>101 = Luxor logo | | | |
| 3 | Ny tv (fabriksny) | | Ja | Nej |
| 4 | Volymindikering PÅ | | Ja | Nej |
| 5 | Program info PÅ | | Ja | Nej |
| 6 | Frontpanel lås PÅ | | Ja | Nej |
| 7 | Avstängningstimer | | Ja | Nej |

# Service-inställningar via I²C-buss

**Fjärrkontrollknappar i service-läge**
När mottagaren är i service-läge, kan du välja normalt tv-läge med TV-knappen och återgå till service-läget med i-knappen.
Siffer- och pilknappar används för service-inställningar. OK-knappen sparar inställningarna.

**Justeringar för olika bildformat**
Gör alla inställningar med PAL-signal om inte annat näms. Gör 4:3-apparaters inställningar med normalt 4:3 (classic) bildformat och 16:9-apparaters inställningar med wide (16:9) bildformat. Gör därefter nödvändiga inställningar med andra bildformat/signaler. Nödvändiga inställningar i tabellen nedtill.

*Obs! Kontrollera apparatens konfiguration före inställning och gör endast nödvändiga inställningar.*

**För att göra service-inställning**
1. Mata in en tvåsiffrig kod för att välja inställning (t.ex. 04 = bildbredd, se tabellen) med sifferknapparna eller välj inställning stegvist med pilknapparna (up/nedåt).

*Obs! Driftspänning och Ug2 inställningarna måste göras före bildgeometri-inställningar.*

2. Justera med pilknapparna (vänster/höger).

3. Spara inställningen med OK-knappen.

*Obs!*
- *För att undvika ofullständig inställning, spara varje inställning direkt efter de är utförda.*
- *Måste en inställning göras separat för olika bildformat/signaler, välj först normalt tv-läge med TV-knappen och välj därefter bildformat/signal. Återgå därefter till service-läget genom att trycka på i-knappen.*

**För att göra bildgeometriinställningar**
För att geometriinställningar skall kunna göras med rörlig bild visas en röd ram runt bildens avlänkningsyta. Ramen kan kopplas PÅ/AV med MENU-knappen.

**Bildgeometri-inställningar**

| Inställning | Kod | OSD-namn | Normal (4:3) | Progressiv scan 50 Hz 4:3 | Bred (16:9) | Progressiv scan 50 Hz 16:9 | VGA 70 Hz | VGA 60 Hz | Obs! |
|---|---|---|---|---|---|---|---|---|---|
| Vertikal amplitud | 00 | V-AMPL. | X | X | | | X | X | |
| Vertikal centrering | 01 | V-SHIFT | X | X | | | X | X | |
| Vertikal linearitet | 02 | V-LINEARITY | X | X | | | X | | |
| Vertikal S-korrigering | 03 | S-CORR. | X | X | | | X | | |
| Bildbredd | 04 | WIDTH | X | X | | | X | X | |
| Horisontal centrering | 05 | H-SHIFT | X | | | | | | Justera avlänkningen till bildrutans mitt (endast VGA-mottagare). |
| Horisontal fas | 06 | PHASE | X | | | | | | |
| Horisontal släckning | 07 | HOR BLANK | X | | | | | | Sök först upp gränsvärdena då horisontalsläckningen går över bildområdet, både till vänster och höger, och ställ därefter in horisontalsläckningen till mitten mellan dessa värden. |
| Parabol | 08 | PARABOLA | X | X | X | X | X | X | |
| Övre hörnen | 09 | CORNER UP | X | X | | | X | X | |
| Nedre hörnen | 10 | CORNER LO | X | X | | | X | X | |
| Bow | 11 | BOW | X | X | | | X | | |
| Trapets | 12 | TRAPEZIUM | X | X | | | X | | |
| Parallellogram distortion | 13 | ANGLE | X | X | | | X | | |

**Andra inställningar**

| Inställning | Kod | OSD-namn | Obs! |
|---|---|---|---|
| Skärmgallerspänning | 14 | G2 DISP. | Justera Ug2 tills 180 ± 20 visas.<br><br>*Obs! Tryck inte på OK-knappen om endast Ug2 inställningen är nödvändig.*<br><br>Måste färgtemperaturen justeras, starta den här genom att trycka på OK-knappen. Detta återställer grundvärdena för koderna 14...19 och låser referensvärdet (17...19) på den högsta färgkanonen. |
| Röd förstärkning | 15 | R GAIN | Denna procedur är nödvändig när t.ex. bildrör, CRT-modulen, etc. är utbytta. Justera först GAIN värdet (vitt till 80 nit) och därefter REF värdet (svart till 1,5 nit). Kontrollera GAIN värdena på nytt och justera om nödvändigt. |
| Röd förstärkning | 16 | G GAIN | |
| Blå förstärkning | 17 | B GAIN | |
| Röd referens | 18 | R REF. Grön | Justering: När du trycker på MENU-knappen byts gråbild/external-bild och trycker du på den GRÖNA och den GULA-knappen ändras kontrast/ljus-värdena. |
| referens | 19 | G REF. Blå | |
| referens | 20 | B REF. | |
| VPU klockoskillator | 21 | VCO | Denna justering är automatisk, normalt behöver du endast trycka på OK för att spara inställningen. Visas 9999, fungerar inte inställningen och en reparation måste göras. Obs! Använd standard 50 Hz signal! |
| Högspänningsbegränsning | 22 | EHT PROT | Justera värdet uppåt tills bilden släcks. Samtidigt minskas värdet automatiskt med 60 steg. Därefter tryck på OK för att spara inställningen. |

**Varierande inställningar**

| Inställning | Kod | OSD-namn | Obs! |
|---|---|---|---|
| BCL (beam current limitation) tröskel | 23 | BCL THRES | Bildrörstyp relaterade förinställningar informeras separat (CRT dependant adjustments). |
| BCL-tidskonstant | 24 | BCL TC | |
| BCL-förstärkning | 25 | BCL GAIN | |
| EHT-kompensering för H-amplitud | 26 | EHTH | |
| EHT-kompensering för H-fas | 27 | EHTH PHA | |
| Tidskonstant för H-fas | 28 | EHTH TC | |
| EHT-kompensering för V-amplitud | 29 | EHTV | |
| Tidskonstant för H/V-amplitud | 30 | EHTV TC | |
| Tröskel för H/V-amplituds EHT-korrigering | 31 | EHT THRES | |
| Vertikal-kompensering vid hög strålström | 32 | EHTV2 | |
| H-kompensering vid hög strålström | 33 | EHTH2 | |
| Vit-topp begränsning | 34 | Y MAX | |
| 2. övre hörnen | 35 | CORN 2 UP | |
| 2. nedre hörnen | 36 | CORN 2 LO | |

# Service-inställningar

## O Drivspänningsblocket

**Drivspänning och skyddskretsen**

1. Ställ ljus och kontrast på normal nivå. Anslut en universalvoltmeter till katoden på **Do16**.

2. Justera **U1-spänningen** med **Po1**. Spänningen är beroende på bildrörstyp, se avsnitt "Varierande komponenter".

3. Kontrollera överströmskyddet efter serviceingrepp på nätdelens primärsida. Stäng av mottagaren med huvudnätbrytaren. Kortslut kondensator **Co36** och håll kortslutningen på plats. Koppla på mottagaren med huvudnätbrytaren. Fungerar överströmskyddet, startar inte nätdelen (men försöker att starta). Stäng av mottagaren med huvudnätbrytaren. Ta bort kortslutningen och slå därefter på apparaten igen med huvudnätbrytaren.

**Säkerhetsegenskaper**

Aktivering av service-läget stänger av följande egenskaper:

- Horisontal skyddsfunktion (EHT)
- Uppstartningskontroll: Videoprocessor **VPC 3230**, Scarabeus **SDA 9400** och Avlänkningsprocessor **DDP 3310** initialiseras inte korrekt.

## Horisontal avlänkningsblock

**Horisontal linearitet**

Justera med **Lk1**.

**Fokus**

Ställ ljus och kontrast på normal nivå. Använd rutmöster testbild och justera bilden för optimal resolution.

**(Skärmgallerspänning) Ug2-spänningen**

Ug2-spänningen kan lätt justeras med hjälp av bilden, se avsnitt "Andra inställningar" / skärmgallerspänning.

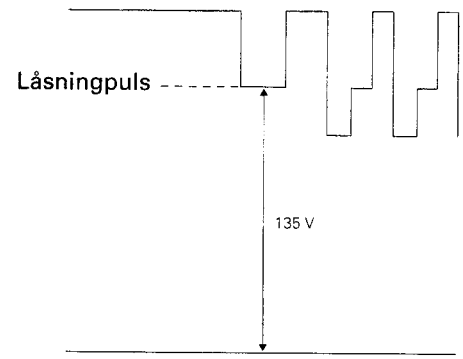
**Inställning av Ug2 med hjälp av oscilloskop:**

1. Sätt ljus och färgmättnad till normal nivå och kontrasten till minimum.

2. Efter vertikalsläckning finns en svartnivå mätpuls (clamp puls) på **stift 9** på **ICh1**, **ICh2** och **ICh3**. Använd ett oscilloskop och sök efter slutsteget med högsta svartnivån (m.a.o. högsta spänningen på svartnivå mätpulsen).

3. Justera spänningen till **+135 V** med Ug2 (se figuren).

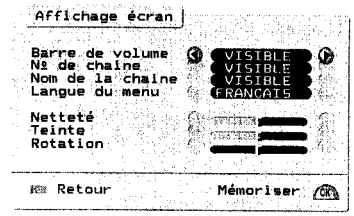
*Obs! Justera spänningen med låsningspulsen (clamp puls).*



# Mode d'emploi

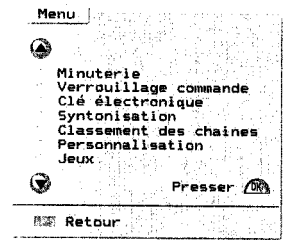
### Changement de la langue de menu

1. Appuyez sur la touche jaune pour sélectionner le menu Vision.
2. Appuyez sur la touche rouge pour sélectionner le menu Affichage écran.
3. Sélectionnez "Langue du menu" à l'aide des touches fléchées (haut/bas) et changez la langue de menu à l'aide des touches fléchées (gauche/droite).
4. Appuyez sur la touche OK pour enregistrer les modifications.



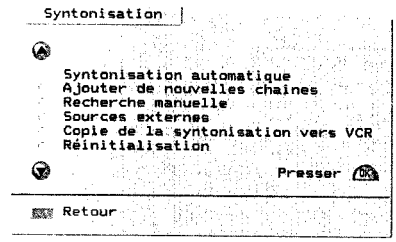

### Recherche manuelle

1. Sélectionnez le numéro du programme à rechercher.
2. Appuyez sur la touche MENU.
3. Sélectionnez "Syntonisation" à l'aide des touches fléchées (haut/bas) et appuyez sur la touche OK.
4. Sélectionnez "Recherche manuelle" à l'aide des touches fléchées (haut/bas) et appuyez sur la touche OK.
5. Appuyez sur la touche rouge (Recherche de canal).
6. Appuyez sur la touche OK pour procéder à l'enregistrement.
7. Appuyez sur la touche TV pour quitter.



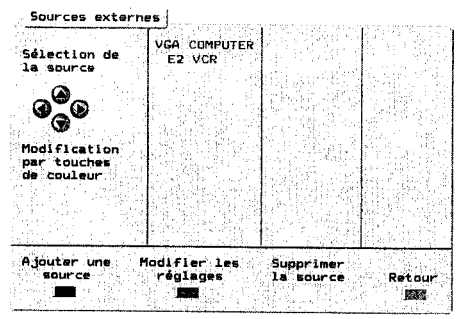

### APSi (système de programmation automatique)

1. Appuyez sur la touche MENU.
2. Sélectionnez "Syntonisation" à l'aide des touches fléchées et appuyez sur la touche OK.
3. Sélectionnez "Syntonisation automatique" et appuyez sur la touche OK.
4. Pour rechercher de nouveau les chaînes, appuyez sur la touche rouge.
5. Appuyez sur la touche TV pour quitter.




### Sélection de l'entrée VGA

1. Appuyez sur la touche MENU.
2. Sélectionnez "Syntonisation" à l'aide des touches fléchées et appuyez sur la touche OK.
3. Sélectionnez "Sources externes" à l'aide des touches fléchées et appuyez sur la touche OK.
4. Sélectionnez "VGA COMPUTER" à l'aide des touches fléchées et appuyez sur la touche TV (si "VGA COMPUTER" n'apparaît pas dans la liste, sélectionnez "Ajouter une source" en appuyant sur la touche rouge. Sélectionnez ensuite "Ordinateur" à l'aide des touches fléchées et appuyez sur la touche OK).




# Réglages de service

### Activation du mode de service

Le récepteur doit être sous tension ou en veille lors de l'activation du mode de service.

1. Saisissez votre mot de passe tout en maintenant enfoncée la touche ◢- (volume moins) **sur le panneau avant du TV** : appuyez d'abord sur la touche MENU, puis sur la touche TV **de la télécommande**. Relâchez la touche ◢- après avoir appuyé sur la touche TV. Si le récepteur est en veille une fois le mot de passe saisi, allumez-le en appuyant sur la touche TV.
2. Activez le mode de service en appuyant sur la touche i. Le menu de réglage suivant apparaît à l'écran :

Le numéro et le nom du réglage, la valeur d'initialisation (à gauche) et la valeur de réglage (à droite) s'affichent dans le menu.

3. Appuyez sur la touche TV pour quitter le mode de service et utilisez l'interrupteur principal pour éteindre le récepteur.

*Remarque! Le mode de service reste activé jusqu'à ce que le récepteur soit éteint à l'aide de l'interrupteur principal.*

### Initialisation de la NVRAM (ICav19)

Si la RAM rémanente (NVRAM) a été remplacée, vous devez l'initialiser et la configurer.

1. Mettez le récepteur en veille. Saisissez votre mot de passe tout en maintenant enfoncée la touche ◢- (volume moins) de la télécommande : appuyez sur les touches MENU, TV et i de la télécommande. Relâchez la touche ◢- après avoir appuyé sur la touche TV.
2. Commencez l'initialisation en entrant le code clé : touches bleue, 2, 5, 4 et OK. L'initialisation dure environ 20 secondes. Le récepteur s'allume automatiquement lorsque l'initialisation est terminée.
3. Activez le mode de service en appuyant sur la touche i.
4. Appuyez sur la touche RED pour préconfigurer le récepteur. Reportez-vous également au chapitre "Configuration et diagnostic des pannes" (vérifiez que les résultats de la configuration automatique au niveau des octets IIC DEV 1-4 et IF OPT correspondent à la configuration réelle du récepteur).
5. Configurez manuellement les octets d'option (TXT OPT, SYS OPT 1 & 2 et DSP OPT) afin qu'ils correspondent à la configuration réelle du récepteur. Appuyez sur la touche OK pour enregistrer les paramètres.
6. Utilisez l'interrupteur principal pour éteindre le récepteur.

# Réglages de service

7. Utilisez l'interrupteur principal pour allumer le récepteur et recherchez une ou plusieurs chaînes de télévision.
8. Activez le mode de service et procédez aux réglages de service requis.
9. Utilisez l'interrupteur principal pour éteindre le récepteur.

### Configuration et diagnostic des pannes

Le récepteur doit être configuré après tout ajout ou suppression d'option. Lorsque vous appuyez sur la touche rouge en mode de service, le processeur contrôle la configuration du récepteur et affiche les paramètres à l'écran. La configuration peut être enregistrée à l'aide de la touche OK.

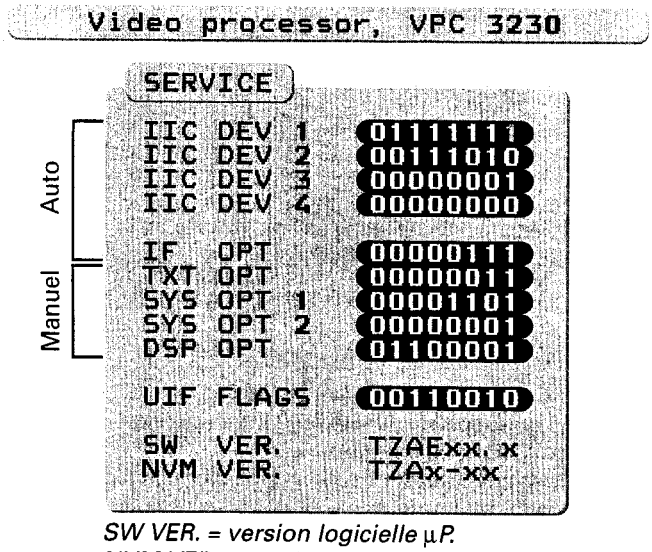
*Remarque! Avant de configurer le récepteur, débranchez les câbles Péritel 3 et RCA (sortie de ligne).*

Cette fonction peut aussi être utilisée pour le diagnostic des pannes. Si un bit d'option n'est pas à '1' lorsqu'il devrait être défini sur cette valeur, cela signifie que le circuit imprimé (ou la fonction) est soit absent, soit défectueux.

*Remarque ! Les octets IIC DEV 1-4 et IF OPT sont configurés automatiquement à chaque utilisation de la touche rouge.*
*Les octets TXT OPT, SYS OPT 1 & 2, DSP OPT et UIF FLAGS doivent être configurés manuellement.*

### Modification des octets d'option

1. Sélectionnez le mode de configuration en appuyant sur la touche rouge en mode de service.




*SW VER. = version logicielle µP.*
*NVM VER. = version logicielle NVRAM.*

2. Sélectionnez l'octet IIC Device 1 - 4, Option 1 - 5 ou Uif Flags à l'aide des touches fléchées (haut/bas).
3. Vous pouvez visualiser le nom du bit correspondant à l'aide des touches fléchées (haut/bas et gauche/droite). Le bit sélectionné apparaît en surbrillance.
4. Utilisez les touches numériques (0 ... 7) pour mettre les bits à '1' / '0'.
5. Appuyez sur la touche OK pour enregistrer les paramètres.
6. Appuyez sur la touche rouge pour revenir au mode de service normal.

### Description de l'octet d'option

| Bit | Description | Configuration 7 6 5 4 3 2 1 0 | '1' | '0' |
|---|---|---|---|---|
| | **IIC DEV 1** | **01101111** | | |
| 0 | Processeur vidéo VPC 3230 | | Oui | Non |
| 1 | Scarabeus SDA 9400 | | Oui | Non |
| 2 | Processeur de déflexion DDP 3310 | | Oui | Non |
| 3 | Tuner TV | | Oui | Non |
| 4 | Interrupteur vidéo, TEA6415C | | Oui | Non |
| 5 | Interrupteur vidéo, TDA6417 | | Oui | Non |
| 6 | Processeur audio MSP341XG | | Oui | Non |
| 7 | Subwoofer | | Oui | Non |
| | **IIC DEV 2** | **00111010** | | |
| 0 | Processeur audio MSP 3411G | | Oui | Non |
| 1 | Mégatexte SDA5275-3 | | Oui | Non |
| 2 | 4 Mo de mémoire de texte | | Oui | Non |
| 3 | 16 Mo de mémoire de texte | | Oui | Non |
| 4 | Tube cathodique 16:9 | | Oui | Non |
| 5 | Connexion VGA | | Oui | Non |
| 6 | Processeur PIP, SDA9489/9589 | | Oui | Non |
| 7 | Tuner PIP | | Oui | Non |
| | **IIC DEV 3** | **00000001** | | |
| 0 | Ext 3 installée | | Oui | Non |
| 1 | Module de sortie de ligne installé | | Oui | Non |
| 2 | DDP F6 ou plus nouveau | | Oui | Non |
| 3...7 | Libre | | Oui | Non |
| | **IIC DEV 4** | **00000000** | | |
| 0...7 | Libre | | Oui | Non |
| | **IF OPT** | **00000000** | | |
| 0 | B/G IF | | Oui | Non |
| 1 | I IF | | Oui | Non |
| 2 | D/K IF | | Oui | Non |
| 3 | L/L' IF | | Oui | Non |
| 4 | Réservé (à 1, non utilisé) | | Oui | Non |
| 5 | Réservation pour NTSC M | | Oui | Non |
| 6...7 | Libre | | Oui | Non |
| | **TXT OPT** | **00000011** | | |
| 0 | TOP activé | | Oui | Non |
| 1 | FLOF activé | | Oui | Non |
| 2...4 | Libre | | Oui | Non |
| 5 | EPG activé | | Oui | Non |
| 6 | Enregistrement EPG activé | | Oui | Non |
| 7 | Libre | | Oui | Non |
| | **SYS OPT 1** | **00001101** | | |
| 0 | Connecteur A/V installé | | Oui | Non |
| 1 | E1 RVB désactivé sur les autres programmes | | Oui | Non |
| 2 | ACI activé | | Oui | Non |
| 3 | Blocage de porteuse activé | | Oui | Non |
| 4 | Intensité sonore activée | | Oui | Non |
| 5...7 | Libre | | Oui | Non |
| | **SYS OPT 2** | **00000001** | | |
| 0 | Réglage de l'inclinaison | | Oui | Non |
| 1 | Démarrage fonctions TV hôtel | | Oui | Non |
| 2...6 | Libre | | Oui | Non |
| 7 | Fonctions TV hôtel activées | | Oui | Non |
| | **DSP OPT** | **00110001** | | |
| 0 | Bit de subwoofer à 0 | | Oui | Non |
| 1 | Bit de subwoofer à 1 | | Oui | Non |
| 2 | Niveau de sortie de ligne fixe | | Oui | Non |
| 3 | Etat virtuel de la sortie de ligne | | Oui | Non |
| 4...7 | Libre | | Oui | Non |
| | **UIF FLAGS** | **00110010** | | |
| 0-2 | Bit de logo | | | |
| | 000 = aucun logo, aller directement à APSi | | | |
| | 001 = aucun logo, aller directement au menu de langue | | | |
| | 011 = logo Finlux | | | |
| | 100 = logo Salora | | | |
| | 101 = logo Luxor | | | |
| 3 | Premier démarrage | | Oui | Non |
| 4 | Affichage de la barre de volume activé (ON) | | Oui | Non |
| 5 | Affichage des informations de programme activé (ON) | | Oui | Non |
| 6 | Verrouillage du panneau avant activé (ON) | | Oui | Non |
| 7 | Compteur d'arrêt actif | | Oui | Non |

# Réglages de service au moyen du bus I²C

**Touches de la télécommande en mode de service**
Lorsque le récepteur est en mode de service, vous pouvez sélectionner le mode d'utilisation normale en appuyant sur la touche TV et revenir au mode de service en appuyant sur la touche i.
Les touches numériques et les touches fléchées sont utilisées pour les réglages de service. La touche OK permet d'enregistrer la configuration.

**Réglages pour des formats d'image différents**
Effectuez tous vos réglages avec le signal PAL, sauf indication contraire. Pour un téléviseur 4:3, utilisez le format d'image 4:3 normal (classique) et pour un téléviseur 16:9, utilisez le format d'image grand écran (16:9). Effectuez ensuite les réglages nécessaires avec d'autres signaux/formats d'image. Les réglages requis figurent dans le tableau ci-dessous.

*Remarque ! Vérifiez la configuration du récepteur avant d'effectuer les réglages et ne procédez qu'aux réglages qui s'avèrent indispensables.*

**Réalisation des réglages de service**
1. A l'aide des touches numériques, affectez à chaque réglage un code à deux chiffres (par exemple, 04 = largeur, reportez-vous aux tableaux suivants). Vous pouvez aussi sélectionner un réglage à l'aide des touches fléchées (haut/bas).

*Remarque! Les réglages d'alimentation et Ug2 doivent être effectués avant les réglages de la géométrie de l'image.*

2. Effectuez les réglages à l'aide des touches fléchées (gauche/droite).
3. Appuyez sur la touche OK pour enregistrer la nouvelle valeur.

*Remarque !*
- *Pour éviter les réglages incomplets, enregistrez chaque réglage en mémoire immédiatement après l'avoir effectué.*
- *Si un réglage doit être effectué séparément pour différents signaux/formats d'image, sélectionnez d'abord le mode d'utilisation normale en appuyant sur la touche TV, puis sélectionnez le signal/format d'image désiré. Pour revenir au mode de service, appuyez sur la touche i.*

**Réglage de la géométrie de l'image**
Une bordure rouge apparaît autour de la zone de déflexion de l'image pour permettre le réglage des images animées.
Vous pouvez activer/désactiver cette fonction à l'aide de la touche MENU.

**Réglages de la géométrie de l'image**

| Réglage | Code | Nom OSD | Classique 4:3 | Balayage progressif 50 Hz 4:3 | Large 16:9 | Balayage progressif 50 Hz 16:9 | VGA 70 Hz | VGA 60 Hz | Remarque! |
|---|---|---|---|---|---|---|---|---|---|
| Amplitude verticale | 00 | V-AMPL. | X | X | | | X | X | |
| Décentrage vertical | 01 | V-SHIFT | X | X | | | X | X | |
| Linéarité verticale | 02 | V-LINEARITY | X | X | | | X | | |
| Correction S verticale | 03 | S-CORR. | X | X | | | X | | |
| Largeur | 04 | WIDTH | X | X | | | X | X | |
| Phase de déflexion horizontale | 05 | H-SHIFT | X | | | | | | Réglez la déflexion au centre de l'écran (pour les écrans VGA uniquement). |
| Phase de vidéo horizontale | 06 | PHASE | X | | | | | | |
| Suppression de lignes | 07 | HOR BLANK | X | | | | | | D'abord trouvez les valeurs du réglage (gauche/droit) à qui le blocage se commence à déplacer sur région rouge, puis réglez le blocage au milieu de ces valeurs du réglage. |
| Parabole | 08 | PARABOLA | X | X | X | X | X | X | |
| Coins supérieurs | 09 | CORNER UP | X | X | | | X | X | |
| Coins inférieurs | 10 | CORNER LO | X | X | | | X | X | |
| Inclinaison | 11 | BOW | X | X | | | X | | |
| Déformation trapézoïdale | 12 | TRAPEZIUM | X | X | | | X | | |
| Distorsion en parallélogramme | 13 | ANGLE | X | X | | | X | | |

**Autres réglages**

| Réglage | Code | Nom OSD | Remarque! |
|---|---|---|---|
| Tension de la grille-écran | 14 | G2 DISP. | Réglez la tension Ug2 jusqu'à ce que la valeur 180 ± 20 s'affiche.<br><br>*Remarque ! N'appuyez pas sur la touche OK si seul le réglage Ug2 est requis.*<br><br>Si le réglage de la température des couleurs est requis, appuyez sur la touche OK. Vous restaurez ainsi la valeur par défaut des codes 14 à 19 et verrouillez la valeur de référence (17 à 19) du canon le plus élevé. |
| Amplification rouge<br>Amplification vert<br>Amplification bleu | 15<br>16<br>17 | R GAIN<br>G GAIN<br>B GAIN | Cette procédure est requise, par exemple lorsque le tube cathodique, le module CRT, etc., a été remplacé.<br>Réglez d'abord les valeurs GAIN (zone blanche à 80 nit), puis les valeurs REF (zones noires à 1,5 nit). Vérifiez les valeurs GAIN à nouveau, puis réglez-les encore, le cas échéant. |
| Référence rouge<br>Référence vert<br>Référence bleu | 18<br>19<br>20 | R REF.<br>G REF.<br>B REF. | Réglage : l'utilisation de la touche MENU modifie l'image grise / image externe et l'utilisation des touches verte et jaune change la valeur de contraste / luminosité. |
| Oscillateur d'horloge VPU | 21 | VCO | Ce réglage étant automatique, il suffit généralement d'appuyer sur la touche OK pour enregistrer la valeur. Si l'écran affiche 9999, cela signifie que le réglage ne peut pas fonctionner et qu'une réparation s'impose. *Remarque! Utilisez un signal de 50 Hz standard !* |
| Limitation de haute tension | 22 | EHT PROT | Réglez la valeur vers le haut jusqu'à ce que l'image TV s'efface. En même temps, la valeur diminue automatiquement de 60 unités. Appuyez sur la touche OK pour enregistrer le réglage. |

Réglage des variables

| Réglage | Code | Nom OSD | Remarque |
|---|---|---|---|
| Seuil BCL (limitation du courant de faisceau) | 23 | BCL THRES | Les valeurs par défaut relatives au tube cathodique sont fournies séparément (CRT dependant adjustments). |
| Constante de temps BCL | 24 | BCL TC | |
| Gain BCL | 25 | BCL GAIN | |
| Compensation EHT pour amplitude H | 26 | EHTH | |
| Compensation EHT pour phase H | 27 | EHTH PHA | |
| Constante de temps pour phase H | 28 | EHTH TC | |
| Compensation EHT pour amplitude V | 29 | EHTV | |
| Constante de temps pour amplitude H/V | 30 | EHTV TC | |
| Seuil pour correct. EHT d'amplitude H/V | 31 | EHT THRES | |
| Compensation V avec courants de faisceau plus élevés | 32 | EHTV2 | |
| Compensation H avec courants de faisceau plus élevés | 33 | EHTH2 | |
| Seuil des crêtes de blanc | 34 | Y MAX | |
| Angles supérieurs (réglage fin) | 35 | CORN 2 UP | |
| Angles inférieurs (réglage fin) | 36 | CORN 2 LO | |

## O Bloc d'alimentation

**Circuit d'alimentation et de protection**

1. Réglez la luminosité et le contraste à un niveau normal. Connectez un voltmètre universel à la cathode **Do16**.

2. Réglez **la tension U1** avec **Po1**. La tension dépend du type de tube cathodique. Reportez-vous à la section "Composants variables".

3. Contrôlez le dispositif de protection à maximum de puissance après toute operation de maintanance dans le circuit principal de l'alimentation. Eteignez le récepteur à l'aide de l'interrupteur principal. Court-circuitez le condensateur **Co36** et maintenez le court-circuit connecté. Allumez le récepteur en appuyant sur l'interrupteur principal. Quand le dispositif de protection à maximum de puissance fonctionne correctement, l'alimentation n'est pas démarré (se tente à démarrer). Eteignez le récepteur à l'aide de l'interrupteur principal. Supprimez le court-circuit et allumez le récepteur en appuyant sur le bouton d'alimentation.

**Fonctions de sécurité**

L'activation du mode de service désactive les fonctions suivantes :

- Fonction de sécurité horizontale (EHT)
- Contrôle au démarrage : le processeur vidéo **VPC 3230**, Scarabeus **SDA 9400** et le processeur de déflexion **DDP 3310** ne s'initialisent pas correctement.

## K Bloc de déflexion horizontale

**Linéarité horizontale**

Effectuez le réglage avec **Lk1**.

**Mise au point**

Réglez la luminosité et le contraste à un niveau normal. Utilisez la mire de quadrillage et réglez l'image de façon à obtenir une résolution optimale.

**(Tension de la grille-écran) Tension Ug2**

La tension Ug2 peut être réglée facilement à l'aide de l'écran. Reportez-vous à la section "Autres réglages" / tension de la grille-écran.

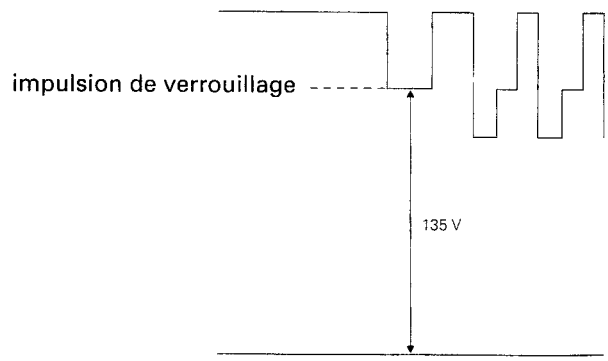
**Réglage de la tension Ug2 à l'aide d'un oscilloscope :**

1. Réglez la luminosité et la saturation de couleur à un niveau normal et le contraste au minimum.

2. A la fin de la suppression de trame, une impulsion de mesure du niveau de noir (impulsion de verrouillage) apparaît sur **la broche 9** de **ICh1**, **ICh2** et **ICh3**. A l'aide d'un oscilloscope, recherchez la phase de sortie avec la coupure la plus élevée (c'est-à-dire la tension la plus élevée pendant l'impulsion de mesure du niveau de noir).

3. Réglez la tension de l'impulsion de verrouillage de manière à ce qu'elle soit égale à **+135 V** avec Ug2 (reportez-vous à la figure).

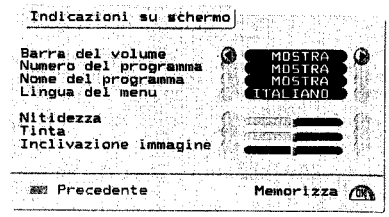
*Remarque ! Réglez la tension avec une impulsion de verrouillage.*



# Istruzioni operative

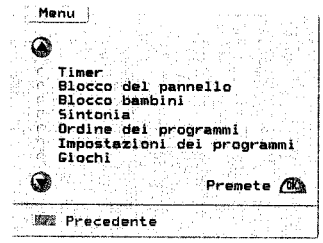
### Modifica della lingua dei menu

1. Premere il tasto giallo per selezionare il menu Immagine.
2. Premere il tasto rosso per selezionare il menu Indicazioni su schermo.
3. Selezionare "Lingua del menu" con i tasti freccia (su/giù) e cambiare la lingua desiderata con i tasti freccia (sinistra/destra).
4. Premere il tasto OK per memorizzare le modifiche.



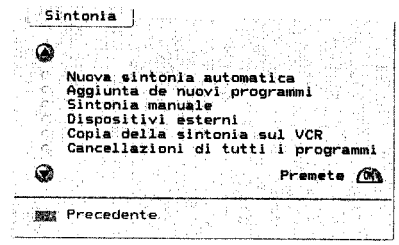

### Sintonia manuale

1. Selezionare il numero programma che si desidera sintonizzare.
2. Premere il tasto MENU.
3. Selezionare "Sintonia" con i tasti freccia (su/giù) e premere il tasto OK.
4. Selezionare "Sintonia manuale" con i tasti freccia (su/giù) e premere il tasto OK.
5. Premere il tasto rosso (Ricerca del canale).
6. Premere il tasto OK per memorizzare.
7. Premere il tasto TV per uscire.



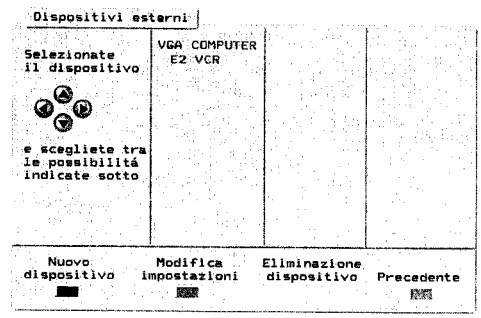

### APSi (Automatic Programming System)

1. Premere il tasto MENU.
2. Selezionare "Sintonia" con i tasti freccia e premere il tasto OK.
3. Selezionare "Nuova sintonia automatica" e premere il tasto OK.
4. Per risintonizzare i canali, premere il tasto rosso.
5. Premere il tasto TV per uscire.




### Selezione dell'ingresso VGA

1. Premere il tasto MENU.
2. Selezionare "Sintonia" con i tasti freccia e premere il tasto OK.
3. Selezionare "Dispositivi esterni" con i tasti freccia e premere il tasto OK.
4. Selezionare "VGA COMPUTER" con i tasti freccia e premere il tasto TV. Se "VGA COMPUTER" non è presente sull'elenco, selezionare "Nuovo dispositivo" premendo il tasto rosso. Poi selezionare "Computer" con i tasti freccia e premere il tasto OK.




# Regolazioni di servizio

### Attivazione del modo servizio

Il ricevitore deve essere acceso o in standby quando si attiva il modo servizio.

1. Tenere premuto il tasto ◢- (diminuzione volume) **sul pannello frontale** e contemporaneamente immettere la password: prima MENU e poi TV tramite **telecomando**. Rilasciare il tasto ◢- dopo avere premuto il tasto TV. Se il ricevitore è in standby dopo l'immissione della password, accenderlo premendo il tasto TV.

2. Attivare il modo servizio premendo il tasto i. Sullo schermo verrà visualizzato quanto segue:

Il numero ed il nome della regolazione, i valori relativi all'inizializzazione (sinistra) e alla regolazione (destra) sono indicati sul menu.

3. Uscire dal modo servizio premendo il tasto TV oppure scollegarsi spegnendo il ricevitore tramite l'interruttore generale.

*Nota: Il modo servizio resta attivato fino a che il ricevitore non viene spento tramite l'interruttore generale.*

### Inizializzazione di NVRAM (ICav19)

Nel caso in cui si sostituisca il modulo NVRAM, questo deve essere inizializzato e configurato.

1. Mettere il ricevitore in modo standby. Tenere premuto il tasto ◢- (diminuzione volume) sul telecomando e contemporaneamente immettere la password: MENU, TV e i tramite telecomando. Rilasciare il tasto ◢- dopo avere premuto il tasto TV.
2. Avviare l'inizializzazione specificando il codice premendo questa sequenza di tasti: BLU, 2, 5, 4 e OK. L'inizializzazione dura circa 20 secondi. Il ricevitore si accende automaticamente al termine dell'inizializzazione.
3. Attivare il modo servizio premendo il tasto i.
4. Premere il tasto ROSSO per preconfigurare il ricevitore; vedere anche "Configurazine e diagnostica". Controllare che dopo la configurazione automatica i byte IIC DEV 1-4 e IF OPT corrispondano alla effettiva configurazione del ricevitore).
5. Impostare i byte delle opzioni manuali (TXT OPT, SYS OPT 1 & 2 e DSP OPT) in modo che corrispondano all'effettiva configurazione del ricevitore. Premere il tasto OK per memorizzare le impostazioni.
6. Spegnere il ricevitore tramite l'interruttore generale.
7. Accendere il ricevitore tramite l'interruttore generale e sintonizzare uno o più canali TV.
8. Attivare il modo servizio ed eseguire le necessarie regolazioni.
9. Spegnere il ricevitore tramite l'interruttore generale.

# Regolazioni di servizio

### Configurazione e diagnostica

Quando si installano o si rimuovono delle opzioni, il ricevitore deve essere configurato. Premendo il tasto ROSSO in modo servizio, il processore verifica la configurazione del ricevitore e mostra le impostazioni sullo schermo. La configurazione può essere memorizzata premendo il tasto OK.

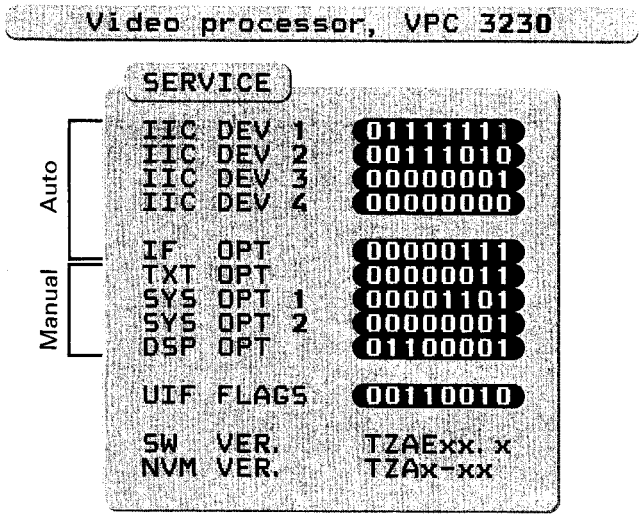
*Nota! Scollegare i cavi dalla presa Scart 3 e RCA (uscita linea) prima di configurare il ricevitore.*

Questa funzione può essere anche utilizzata nella diagnostica. Se il bit di un'opzione non è '1', quando invece dovrebbe esserlo, l'IC (o funzione) non è presente oppure è in errore.

*Nota: I byte IIC DEV 1-4 e IF OPT devono essere configurati automaticamente ogni volta che si preme il tasto ROSSO.*
*I byte TXT OPT, SYS OPT 1 & 2, DSP OPT e UIF FLAGS devono essere impostati manualmente.*

### Modifica dei byte di opzione

1. Selezionare il modo configurazione premendo il tasto ROSSO in modo servizio.




*SW VER. = versione software µP.*
*NVM VER. = versione software NVRAM.*

2. Selezionare il byte IIC Device 1 - 4, il byte Option 1 - 5 o il byte degli indicatori Uif (Uif flags) con i tasti freccia (su/giù).

3. Il nome del bit selezionato è visibile tramite i tasti freccia (su/giù e sinistra/destra).
   Il bit selezionato risulta evidenziato.

4. Impostare / annullare i bit tramite i tasti numerici (0...7).

5. Memorizzare le impostazioni premendo il tasto OK.

6. Tornare al normale modo servizio premendo il tasto ROSSO.

### Descrizione dei byte di opzione

| Bit | Descrizione | Impostazione 7 6 5 4 3 2 1 0 | '1' | '0' |
|---|---|---|---|---|
| | **IIC DEV 1** | **01101111** | | |
| 0 | Processore video VPC 3230 | | Si | No |
| 1 | Scarabeus SDA 9400 | | Si | No |
| 2 | Processore deflessione DDP 3310 | | Si | No |
| 3 | Sintonizzatore TV | | Si | No |
| 4 | Switch video, TEA6415C | | Si | No |
| 5 | Switch video, TDA6417 | | Si | No |
| 6 | Processore audio MSP341XG | | Si | No |
| 7 | Subwoofer | | Si | No |
| | **IIC DEV 2** | **00111010** | | |
| 0 | Processore audio MSP 3411G | | Si | No |
| 1 | Megatext SDA5275-3 | | Si | No |
| 2 | 4 MB memoria teletext | | Si | No |
| 3 | 16 MB memoria teletext | | Si | No |
| 4 | Tubo catodico 16:9 | | Si | No |
| 5 | Connessione VGA | | Si | No |
| 6 | Processore PIP, SDA9489/9589 | | Si | No |
| 7 | Sintonizzatore PIP | | Si | No |
| | **IIC DEV 3** | **00000001** | | |
| 0 | Ext 3 installato | | Si | No |
| 1 | Modulo uscita linea installato | | Si | No |
| 2 | DDP F6 o più recente | | Si | No |
| 3...7 | Non in uso | | Si | No |
| | **IIC DEV 4** | **00000000** | | |
| 0...7 | Non in uso | | Si | No |
| | **IF OPT** | **00000000** | | |
| 0 | B/G IF | | Si | No |
| 1 | I IF | | Si | No |
| 2 | D/K IF | | Si | No |
| 3 | L/L' IF | | Si | No |
| 4 | Riservato (Impostato su 1, non usato) | | Si | No |
| 5 | Riservato per NTSC M | | Si | No |
| 6...7 | Non in uso | | Si | No |
| | **TXT OPT** | **00000011** | | |
| 0 | Funzione TOP abilitata | | Si | No |
| 1 | Funzione FLOF abilitata | | Si | No |
| 2...4 | Non in uso | | Si | No |
| 5 | EPG abilitato | | Si | No |
| 6 | Registrazione EPG abilitata | | Si | No |
| 7 | Non in uso | | Si | No |
| | **SYS OPT 1** | **00001101** | | |
| 0 | Connettore A/V installato | | Si | No |
| 1 | E1 RGB disabilitato su altri programmi | | Si | No |
| 2 | ACI abilitato | | Si | No |
| 3 | Muto portante abilitato | | Si | No |
| 4 | Loudness abilitata | | Si | No |
| 5...7 | Non in uso | | Si | No |
| | **SYS OPT 2** | **00000001** | | |
| 0 | Regolazione inclinazione | | Si | No |
| 1 | Avvio con funzioni hotel | | Si | No |
| 2...6 | Non in uso | | Si | No |
| 7 | Funzioni TV hotel abilitate | | Si | No |
| | **DSP OPT** | **00110001** | | |
| 0 | Bit subwoofer 0 | | Si | No |
| 1 | Bit subwoofer 1 | | Si | No |
| 2 | Livello uscita linea Fissa | | Si | No |
| 3 | Stato uscita linea virtuale | | Si | No |
| 4...7 | Non in uso | | Si | No |
| | **UIF FLAGS** | **00110010** | | |
| 0-2 | Bit logo<br>000 = nessun logo, direttamente a APSi<br>001 = nessun logo, direttamente al menu lingua<br>011 = Logo Finlux<br>100 = Logo Salora<br>101 = Logo Luxor | | | |
| 3 | Prima accensione apparecchio | | Si | No |
| 4 | Visualizzazione barra volume | | Si | No |
| 5 | Visualizzazione info programmi | | Si | No |
| 6 | Blocco pannello frontale | | Si | No |
| 7 | Timer spegnimento attivo | | Si | No |

# Regolazioni di servizio tramite bus I²C

**Tasti del telecomando in modo servizio**
Quando il ricevitore è in modo servizio, è possibile selezionare il normale modo TV premendo il tasto TV e tornare al modo servizio premendo il tasto i. Per le regolazioni di servizio, vengono usati i tasti freccia e i tasti numerici. Il tasto OK serve a memorizzare le impostazioni.

**Regolazioni per diversi formati immagine**
Effettuare tutte le regolazioni con il segnale PAL se non diversamente indicato. Eseguire le regolazioni con formato immagine 4:3 normale (4:3 CLASSIC) e con formato immagine 16:9 (16:9 WIDE). Quindi, eseguire tutte le necessarie regolazioni con altri segnali/formati immagine. Le regolazioni necessarie sono indicate nella tabella di seguito riportata.

*Nota: Controllare la configurazione del ricevitore prima di effettuare le regolazioni e procedere solo con quelle effettivamente necessarie.*

**Come eseguire una regolazione di servizio**
1. Specificare un codice a due cifre che definisca una regolazione (ad esempio 04 = larghezza, vedere la tabella che segue) tramite i tasti numerici o selezionare la regolazione che interessa tramite i tasti (su/giù).

*Nota: Le regolazioni dell'alimentazione e UG2 devono essere effettuate prima delle regolazioni della geometria dell'immagine.*

2. Eseguire le regolazioni con i tasti freccia (sinistra/destra).
3. Memorizzare il nuovo valore premendo il tasto OK.

*Nota:*
- *Per evitare regolazioni incomplete, memorizzare ciascuna regolazione immediatamente dopo averla effettuata.*
- *Se una regolazione deve essere effettuata in modo diverso per altro segnale/formato immagine, selezionare prima il normale modo TV premendo il tasto TV e poi selezionare il segnale/formato immagine desiderato. Tornare al modo servizio premendo il tasto i.*

**Regolazione della geometria dell'immagine**
Per semplificare la regolazione della geometria di un'immagine dal vivo, viene visualizzata una cornice rossa attorno all'area di deflessione dell'immagine. E' possibile attivare e disattivare tale cornice con il tasto MENU.

**Regolazioni della geometria dell'immagine**

| Regolazione | Codice | Display | Norm. (4:3) | Scans. progressiva 50 Hz 4:3 | Wide (16:9) | Scans. progressiva 50 Hz 16:9 | VGA 70 Hz | VGA 60 Hz | Nota! |
|---|---|---|---|---|---|---|---|---|---|
| Ampiezza verticale | 00 | V-AMPL. | X | X | | | X | X | |
| Spostamento centratura verticale | 01 | V-SHIFT | X | X | | | X | X | |
| Linearità verticale | 02 | V-LINEARITY | X | X | | | X | | |
| Correzione S verticale | 03 | S-CORR. | X | X | | | X | | |
| Larghezza | 04 | WIDTH | X | X | | | X | X | |
| Spostamento orizzontale, deflessione | 05 | H-SHIFT | X | | | | | | Regolare la deflessione verso il centro dello schermo (solo VGA). |
| Fase orizzontale, video | 06 | PHASE | X | | | | | | |
| Spegnimento orizzontale | 07 | HOR BLANK | X | | | | | | Cercare i due valori della regolazione nel punto in cui il blanking inizia a tagliare la barra verticale rossa sulla parte destra e sulla parte sinistra dell'immagine. Fissare la regolazione a metà di questi |
| Parabola | 08 | PARABOLA | X | X | X | X | X | X | |
| Angoli superiori | 09 | CORNER UP | X | X | | | X | X | |
| Angoli inferiori | 10 | CORNER LO | X | X | | | X | X | |
| Bow | 11 | BOW | X | X | | | X | | |
| Trapezoidale | 12 | TRAPEZIUM | X | X | | | X | | |
| Distorsione parallelogramma | 13 | ANGLE | X | X | | | X | | |

**Altre regolazioni**

| Regolazione | Codice | Display | Nota! |
|---|---|---|---|
| Tensione griglia schermo | 14 | G2 DISP. | Regolare Ug2 finché sullo schermo non compare 180 ± 20.<br><br>*Nota: Non premere il tasto OK se è necessaria solo la regolazione Ug2.*<br><br>Se è necessaria la regolazione della temperatura del colore, avviarla da qui premendo il tasto OK. In tal modo, si ripristina il valore predefinito dei codici 14...19 e si blocca il valore di riferimento (17...19) del cannone più alto. |
| Guadagno rosso<br>Guadagno verde<br>Guadagno blu | 15<br>16<br>17 | R GAIN<br>G GAIN<br>B GAIN | Questa procedura è necessaria quando, ad esempio, si sostituisce il tubo catodico, il modulo CRT, ecc.<br>Per prima cosa regolare i valori di guadagno (GAIN) (area bianca a 80 nit) e poi i valori di riferimento (REF) (area nera a 1,5 nit). Ricontrollare i valori di guadagno (GAIN) e regolarli nuovamente, se necessario.<br>Regolazione: Premendo il tasto MENU si scambia tra immagine grigia / immagine esterna e premendo i tasti VERDE e GIALLO si cambiano rispettivamente i valori di contrasto / luminosità. |
| Riferimento rosso<br>Riferimento verde<br>Riferimento blu | 18<br>19<br>20 | R REF.<br>G REF.<br>B REF. | |
| Oscillatore clock VPU | 21 | VCO | Questa regolazione è automatica; generalmente, basta premere il tasto OK per memorizzare il valore. Se sullo schermo è indicato 9999, la regolazione non ha avuto esito positivo ed è necessaria l'assistenza tecnica. *Nota: Usare il segnale standard 50Hz!* |
| Limite alta tensione | 22 | EHT PROT | Aumentare il valore finché l'immagine TV non risulti completamente vuota. Contemporaneamente il valore verrà automaticamente diminuito di 60 step. Fatto ciò, premere il tasto OK per memorizzare la regolazione. |

**Impostazioni variabili**

| Regolazione | Codice | Display | Nota! |
|---|---|---|---|
| Soglia BCL (Beam Current Limitation) | 23 | BCL THRES | I valori predefiniti del cinescopio vengono forniti separatamente (CRT dependant adjustments). |
| Costante di tempo BCL | 24 | BCL TC | |
| Guadagno BCL | 25 | BCL GAIN | |
| Compensazione EHT per ampiezza orizzontale | 26 | EHTH | |
| Compensazione EHT per fase orizzontale | 27 | EHTH PHA | |
| Costante di tempo per fase orizzontale | 28 | EHTH TC | |
| Compensazione EHT per ampiezza verticale | 29 | EHTV | |
| Costante di tempo per ampiezza O/V | 30 | EHTV TC | |
| Soglia correzione EHT per ampiezza O/V | 31 | EHT THRES | |
| Compensazione verticale con correnti fascio maggiori | 32 | EHTV2 | |
| Compensazione orizzontale con correnti fascio maggiori | 33 | EHTH2 | |
| Limitazione bianco di picco | 34 | Y MAX | |
| Angoli superiori (fine) | 35 | CORN 2 UP | |
| Angoli inferiori (fine) | 36 | CORN 2 LO | |

# Regolazioni di servizio

## O Blocco alimentatore

**Tensione di alimentazione e circuito di protezione**

1. Impostare luminosità e contrasto sul livello normale. Collegare un voltmetro universale al catodo **Do16**.

2. Regolare **la tensione U1** con **Po1**. La tensione dipende dal tipo di tubo catodico; fare riferimento alla sezione "Componenti variabili".

3. Controllare la protezione di sovraccarico da potenza dopo avere eseguito qualsiasi tipo di intervento tecnico sul circuito primario dell'alimentatore. Spegnere l'apparecchio premendo l'interruttore generale. Cortocircuitare il condensatore **Co36** e mantenere il corto circuito. Quando la protezione di sovraccarico da potenza funziona correttamente, l'alimentatore non si avvierà (proverà ad avviarsi). Spegnere l'apparecchio premendo l'interruttore generale. Rimuovere il cortocircuito ed accendere il ricevitore premendo l'interruttore generale.

**Funzioni di sicurezza**

L'attivazione del modo servizio disabilita le seguenti funzioni:

- Funzione sicurezza orizzontale (EHT)
- Controlli all'avvio: il processore video **VPC 3230**, Scarabeus **SDA 9400** ed il processore di deflessione **DDP 3310** non si inizializzano correttamente.

## K Blocco deflessione orizzontale

**Linearità orizzontale**

Regolare con **Lk1**.

**Messa a fuoco**

Impostare luminosità e contrasto sul livello normale. Usare il monoscopio e regolare l'immagine sulla risoluzione ottimale.

**(Tensione griglia schermo) tensione Ug2**

La tensione Ug2 può essere facilmente regolata con l'aiuto delle informazioni fornite sullo schermo; vedere "Altre regolazioni" / Tensione griglia schermo.

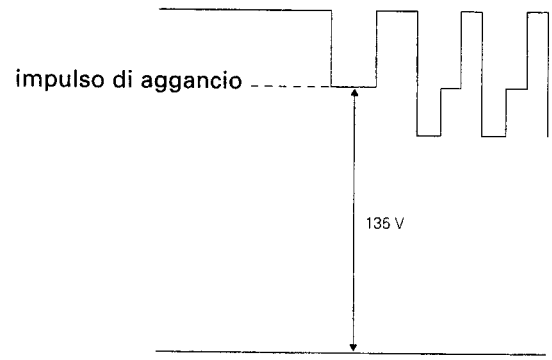
**Regolazione Ug2 con oscilloscopio:**

1. Impostare la luminosità e la saturazione dei colori sul livello normale ed il contrasto sul livello più basso.

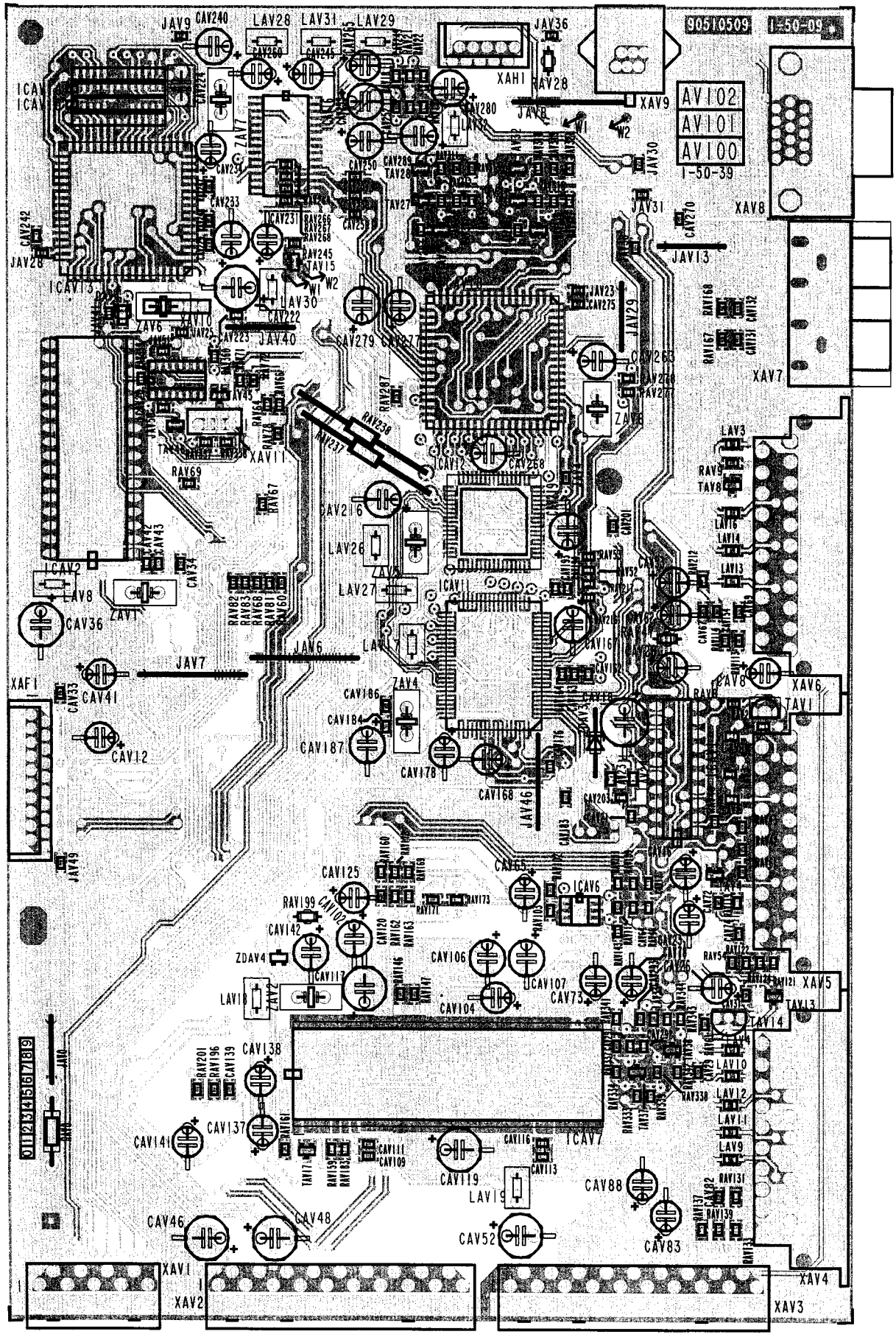
2. Alla fine dello spegnimento verticale, vi è un impulso di misurazione di corrente sul nero (impulso di aggancio) **al piedino 9** di **ICh1**, **ICh2** e **ICh3**. Usare un oscilloscopio ed individuare la fase di uscita con il cut-off più alto (ad esempio, la tensione più alta durante l'impulso di misurazione della corrente sul nero).

3. Regolare la tensione dell'impulso di aggancio più alto su **+135 V** con Ug2 (vedere la figura)

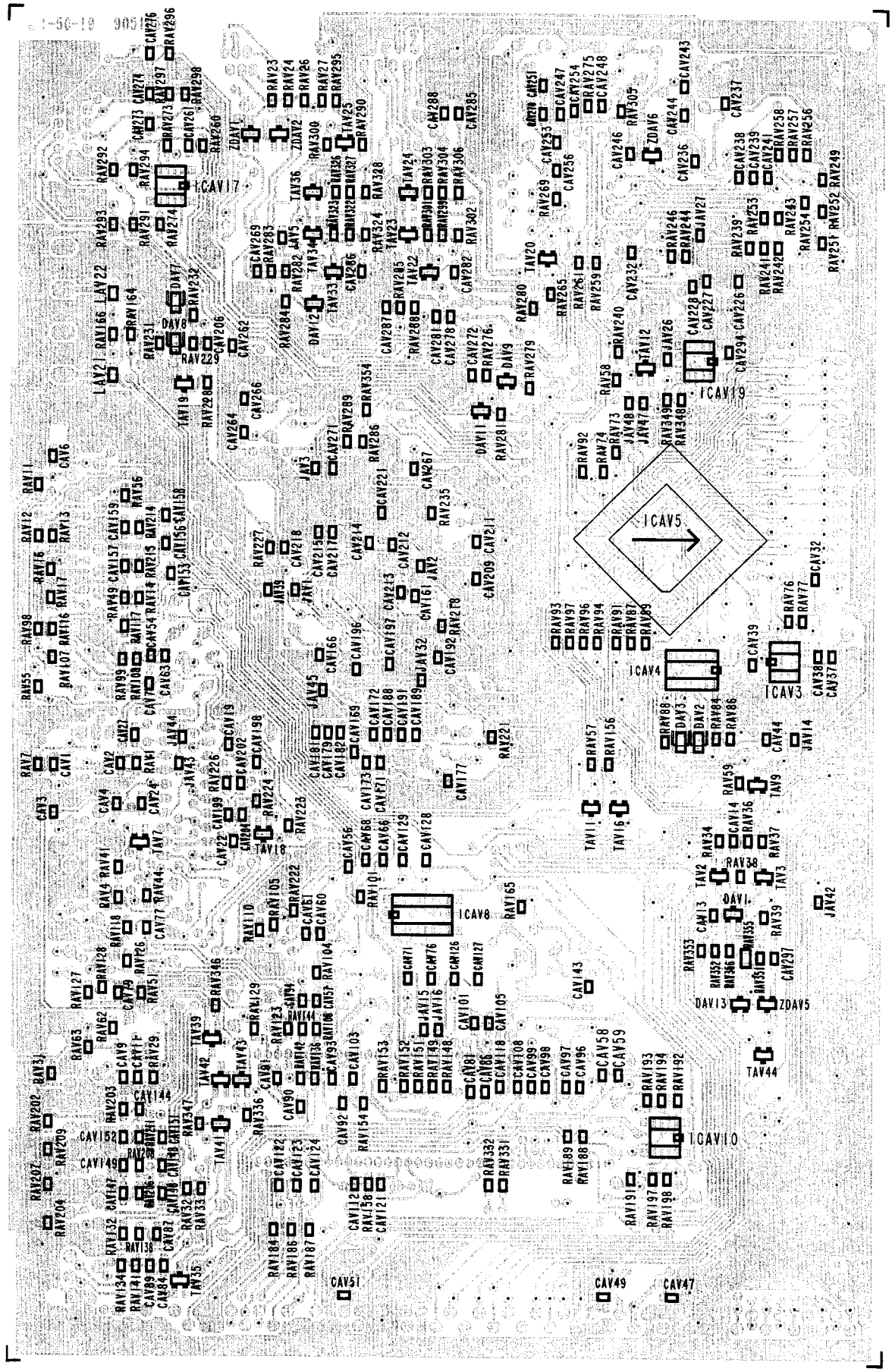
*Nota: Regolare la tensione con un impulso di aggancio.*



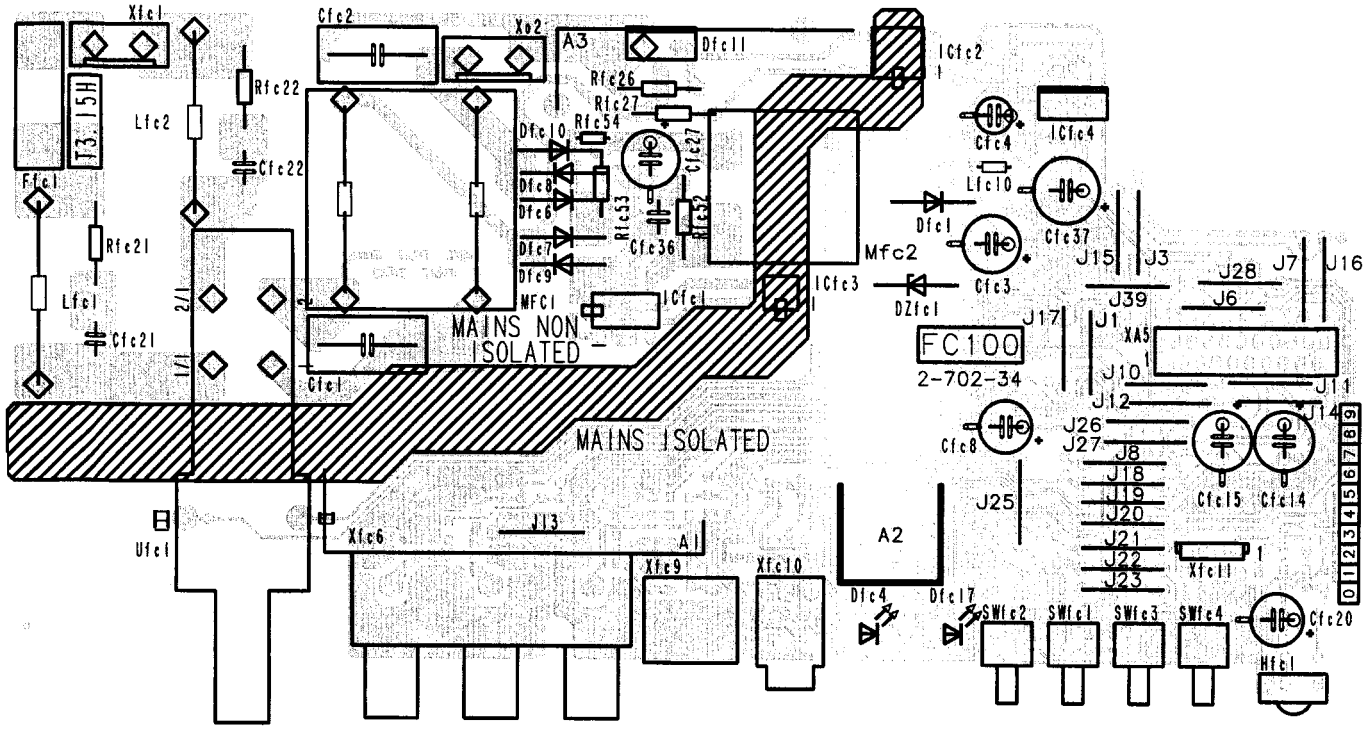
# AV***** (AV100) Signal module (version 9)

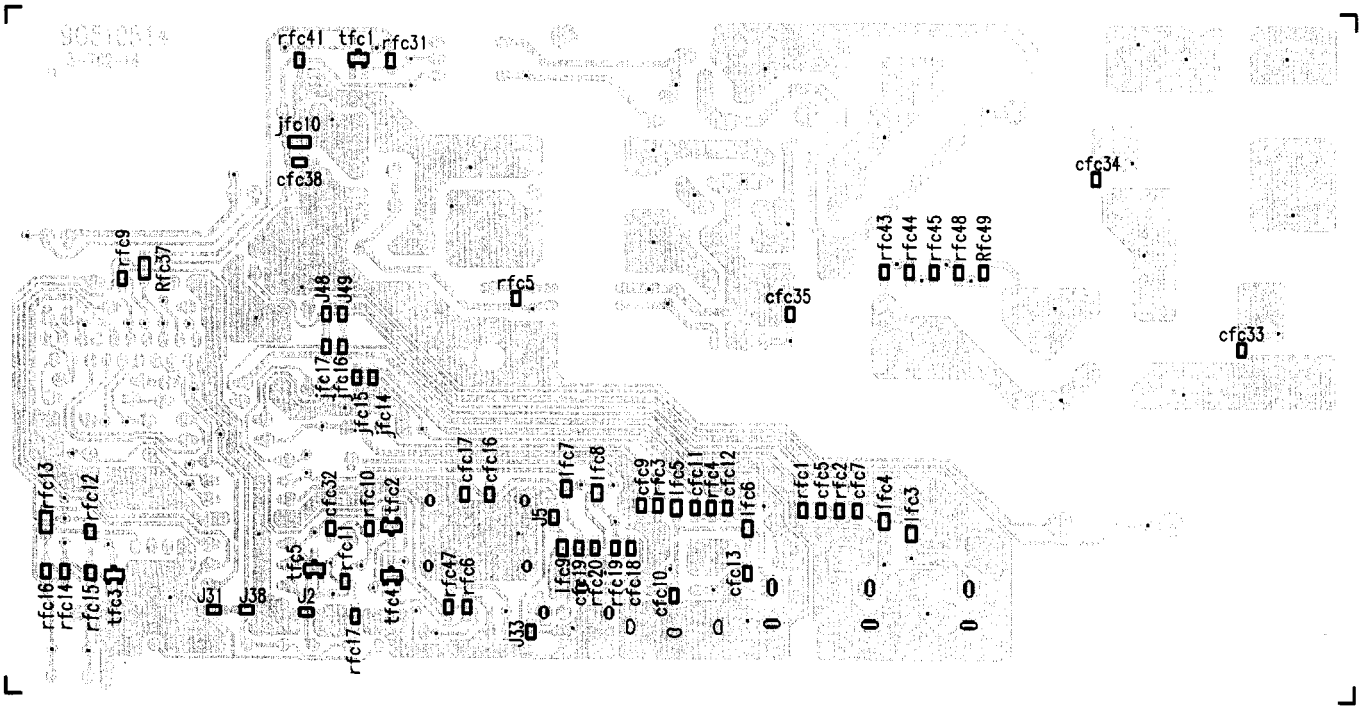


# AV***** (AV100) Signal module (version 9)

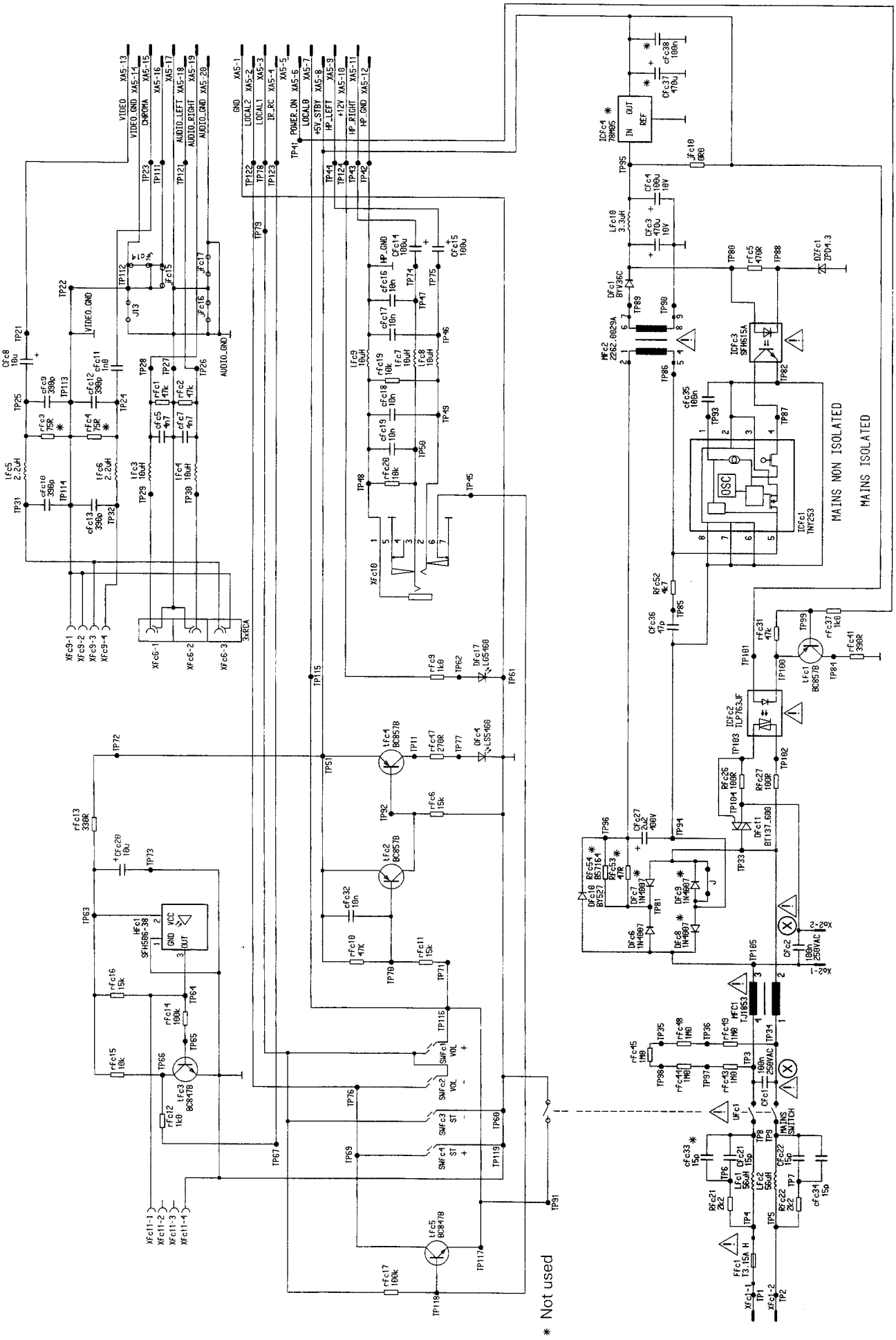


# FC100 Control unit module (version 4)

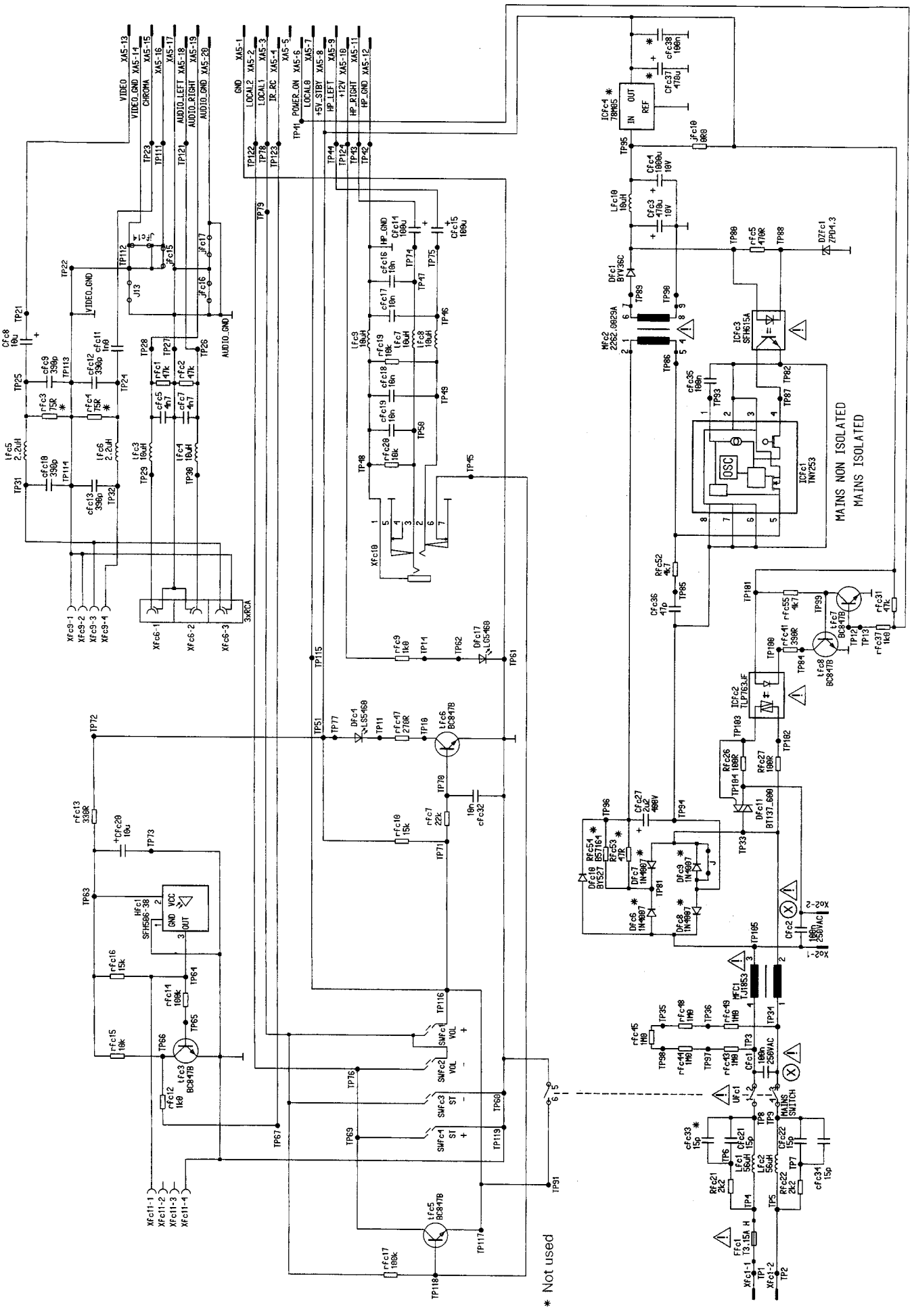


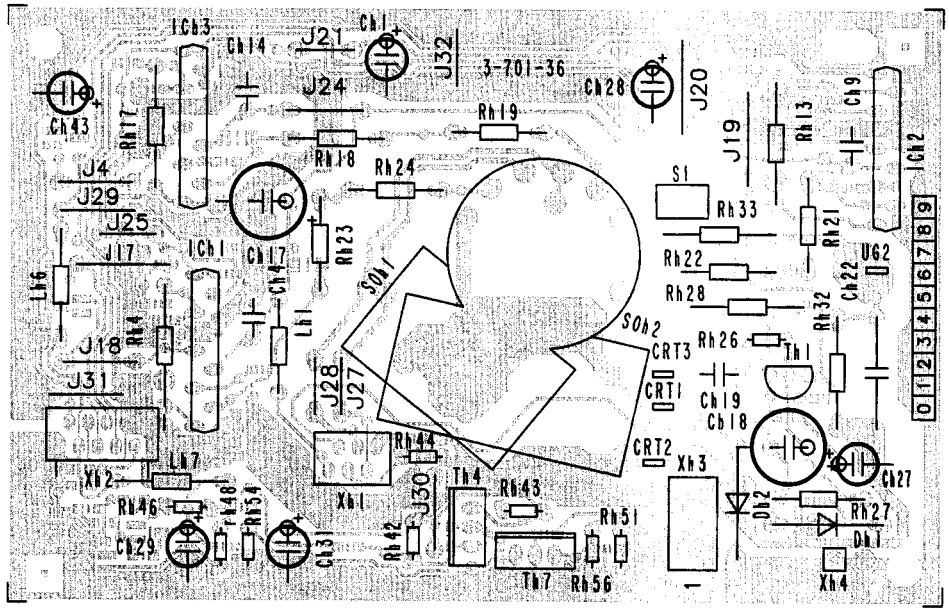
# FC100 Control unit module (version 4)

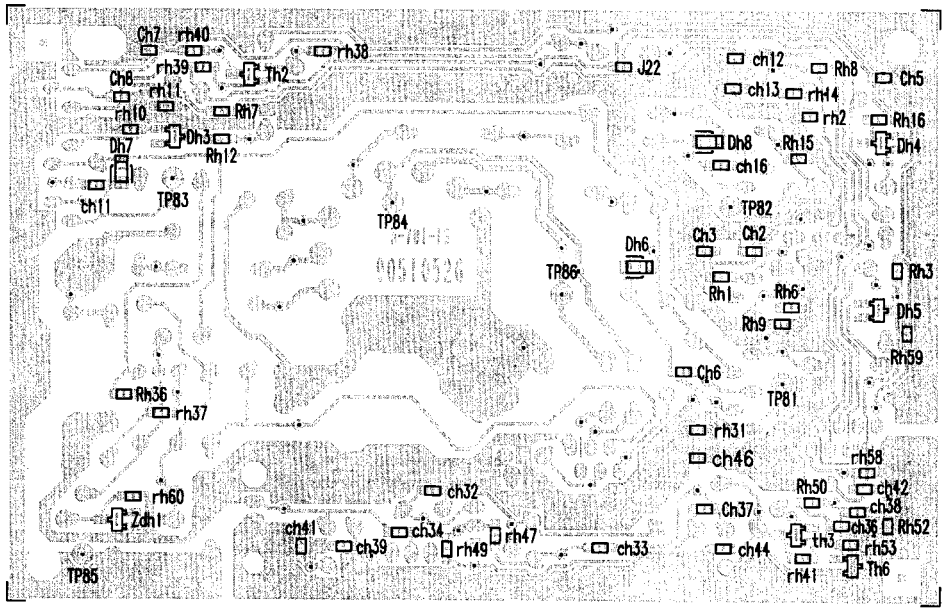


# FC100 Control unit module (version 5)

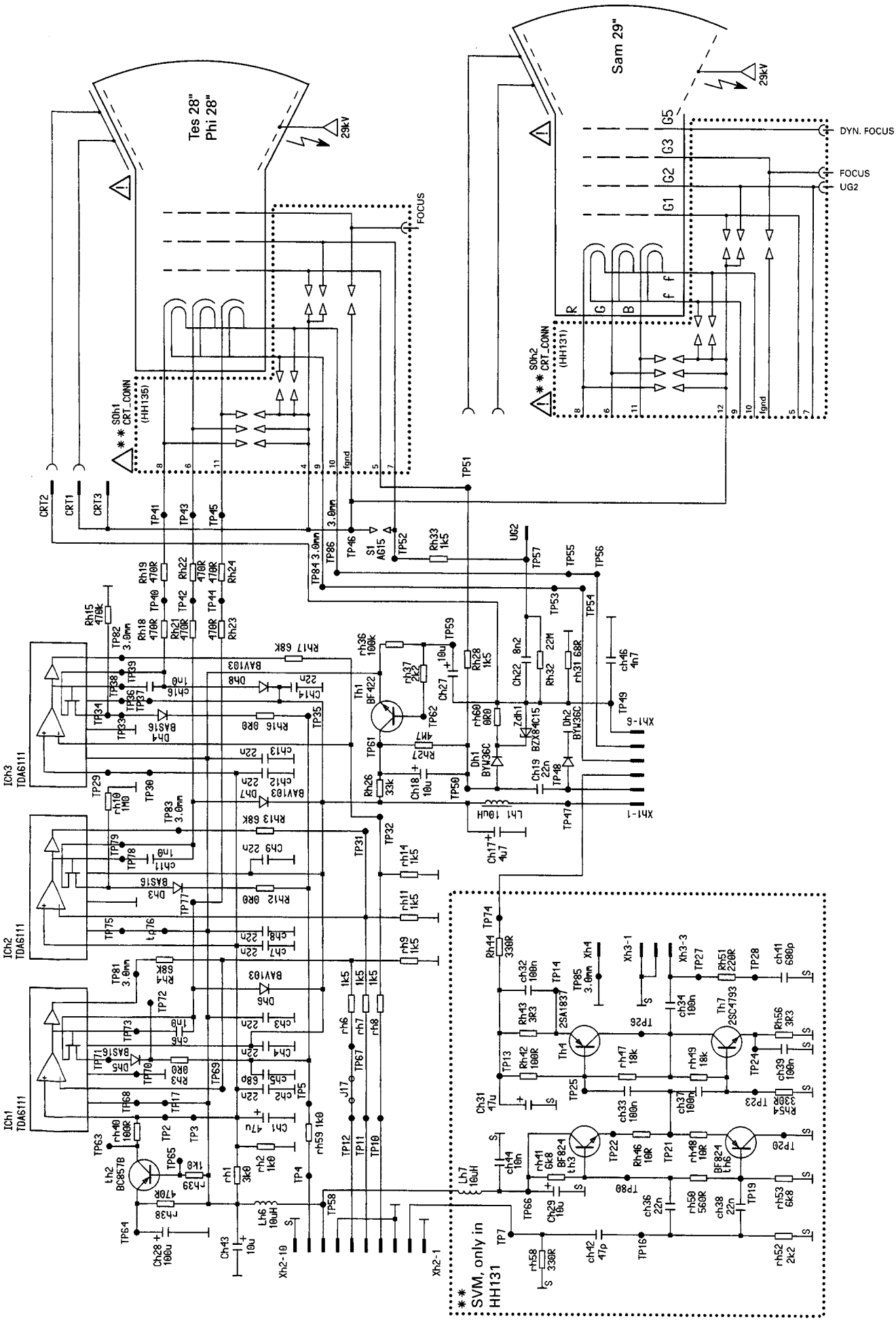


# HH131/135 CRT-module (version 6)

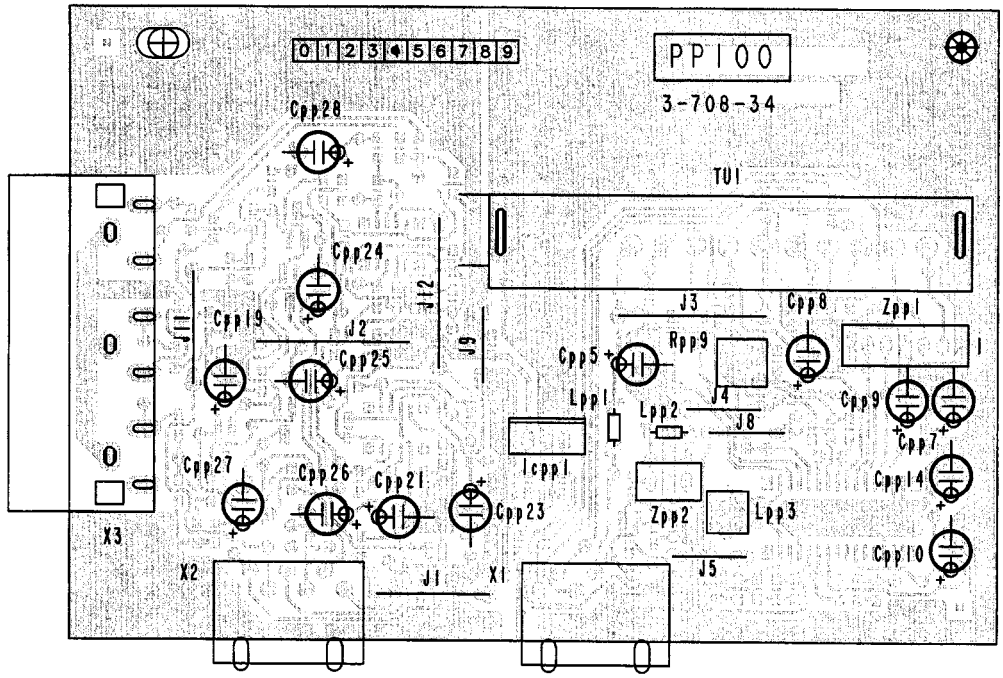


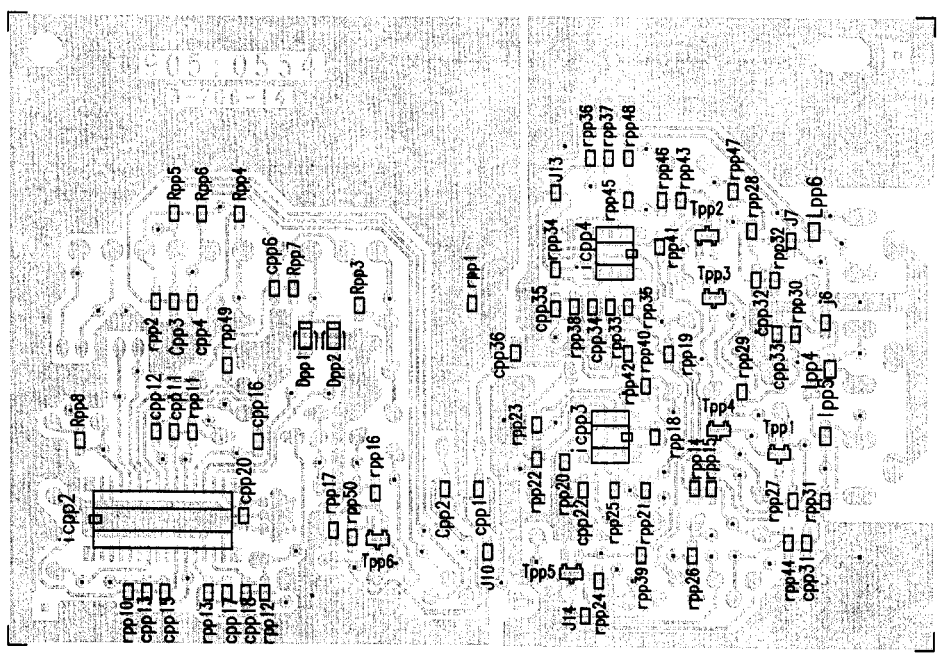



# HH131/135 CRT-module (version 6)

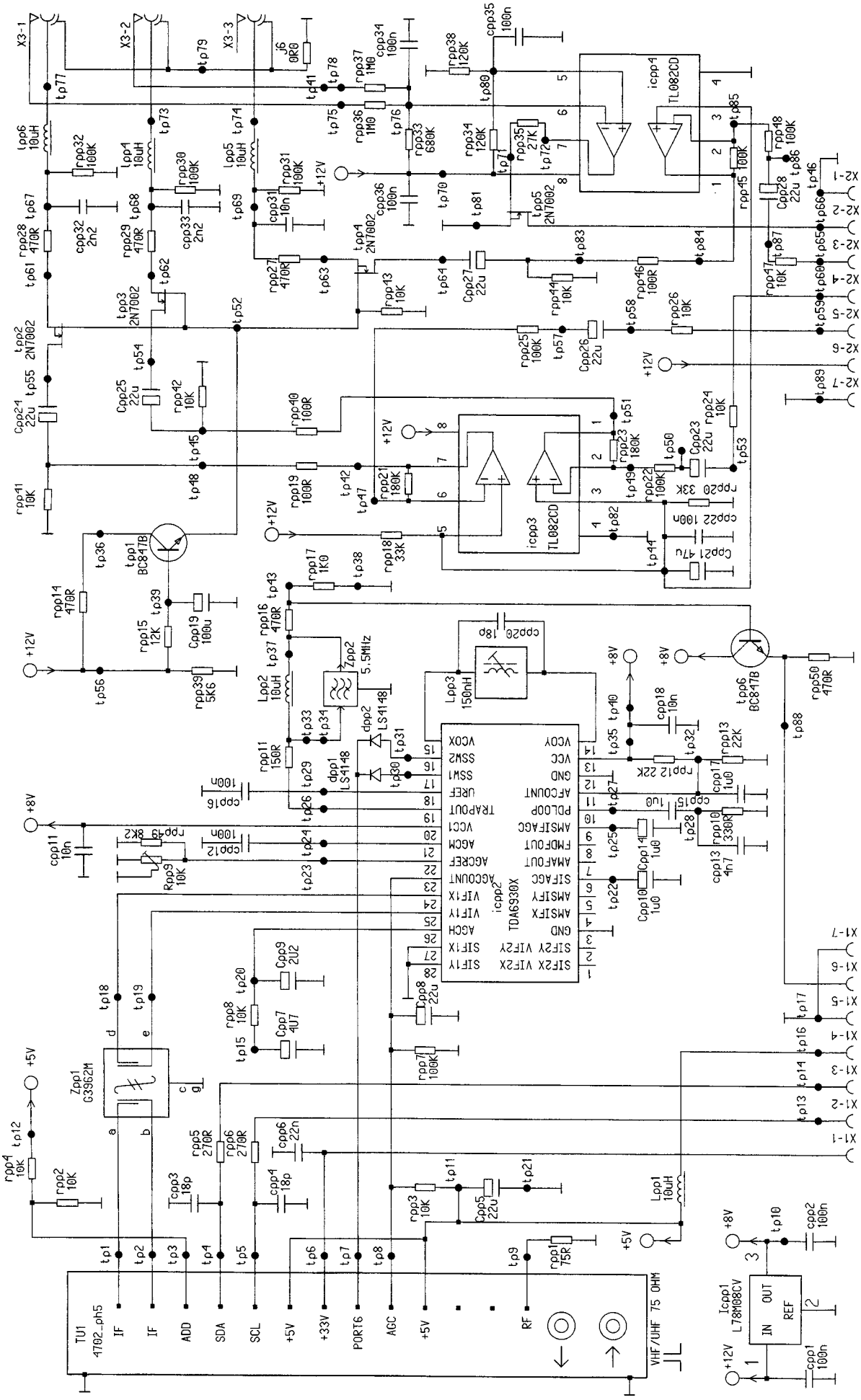


# PP100 Twin tuner picture in picture module (version 4)

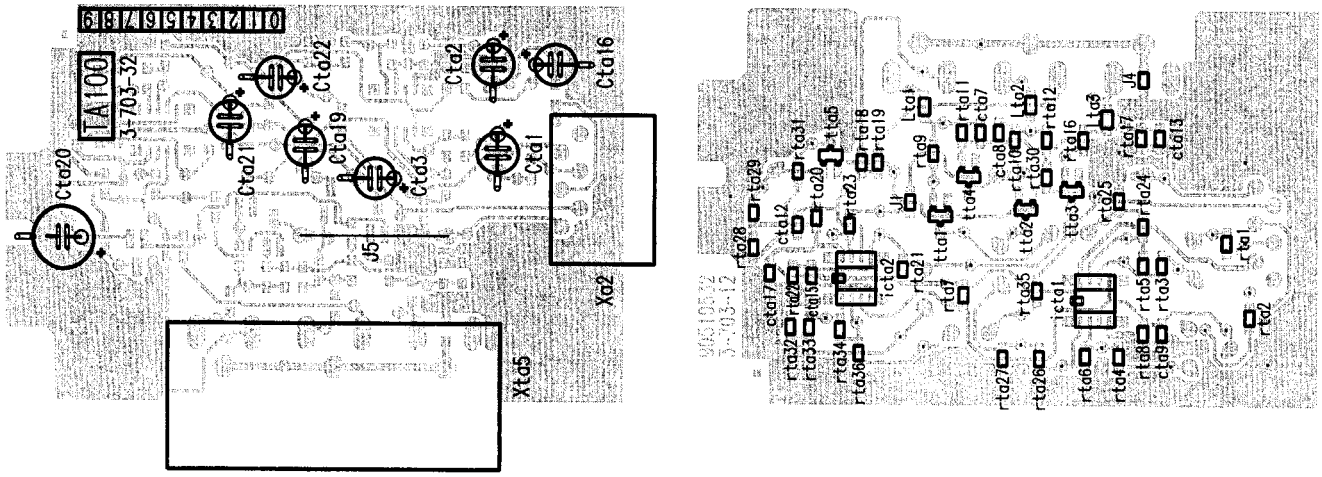


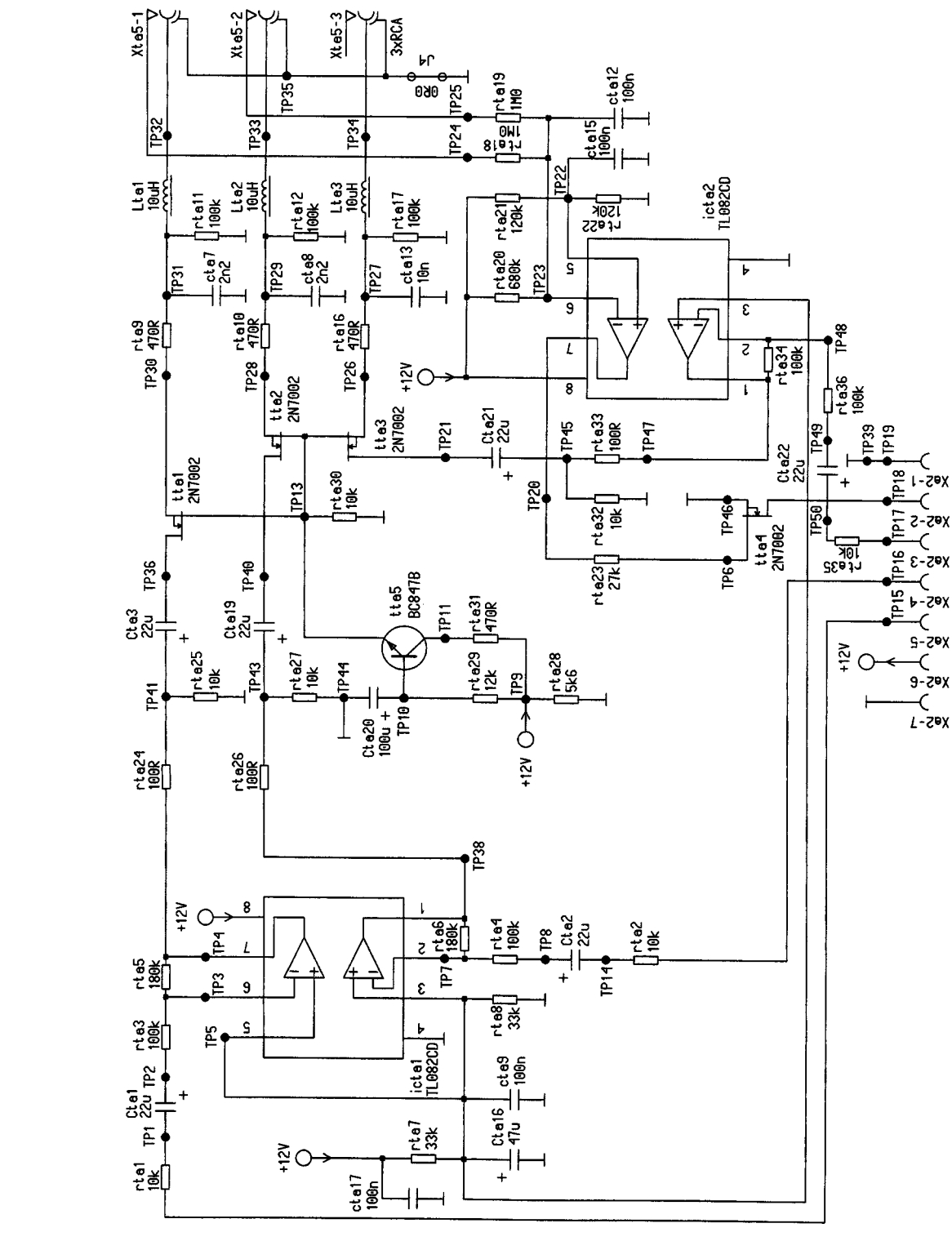



# PP100 Twin tuner picture in picture module (version 4)



# TA100 Audio line output module (version 3)



## (GB) Variable components (D) Röhrenabhängige Bauteile (S) Komponentskillnader
## (F) Composants variables (I) Componenti che differiscono

# FINLUX

| Marketing code | Production code | Chassis | SW version | Design | AV module | Flap | Picture tube type | / Order no. |
|---|---|---|---|---|---|---|---|---|
| 71V100 MC 100 Hz | TX71V3RFNAC | TXDRAAA | TZAE14.0 | 28" V3 MDB | AVACBAA | 84501530 | 28" Tes 4:3 A66EMZ43X51 | 43642843 |
| | TX71V3RFNAB | TXBRAAA | TZAE14.0 | 28" V3 MDB | AVACBAA | 84501530 | 28" Phi 4:3 A66EAK075X44 | CRT28176 |
| 71V102 MC 100 Hz | TX71V3RFNBC | TXDRAAA | TZAE14.0 | 28" V3 Silver | AVACBAA | 84501530 | 28" Tes 4:3 A66EMZ43X51 | 43642843 |
| | TX71V3RFNAC | TXBRAAA | TZAE14.0 | 28" V3 MDB | AVACBAA | 84501530 | 28" Phi 4:3 A66EAK075X44 | CRT28176 |
| 74X100 MC 100 Hz | TX74X4RFNAR | TXHRAAA | TZAE14.0 | 29" X4 Silver | AVACBAA | 84501540 | 29" Sam 4:3 A68CQP891X100 | 43642914 |
| | TX74X4RFNAR | TXHRAAA | TZAE14.0 | 29" X4 Silver | AVACBAA | 84501540 | 29" Sam 4:3 A68CQP891X239 | 43642915 |
| 74X110 MC 100 Hz | TX74X4RFGAR | TXGRDAA | TZAE14.0 | 29" X4 Silver | AVCBBAA | 84501540 | 29" Sam 4:3 A68CQP891X100 | 43642914 |
| | TX74X4RFGAR | TXGRDAA | TZAE14.0 | 29" X4 Silver | AVCBBAA | 84501540 | 29" Sam 4:3 A68CQP891X239 | 43642915 |

# LUXOR

| Marketing code | Production code | Chassis | SW version | Design | AV module | Flap | Picture tube type | / Order no. |
|---|---|---|---|---|---|---|---|---|
| 70FS10Si | TX71B8ELNBC | TXDEAAA | TZAE14.0 | 28" B8 Silver | AVACBAA | 84553510 | 28" Tes 4:3 A66EMZ43X51 | 43642843 |
| | TX71B8ELNBB | TXBEAAA | TZAE14.0 | 28" B8 Silver | AVACBAA | 84553510 | 28" Phi 4:3 A66EAK075X44 | CRT28176 |

# SALORA

| Marketing code | Production code | Chassis | SW version | Design | AV module | Flap | Picture tube type | / Order no. |
|---|---|---|---|---|---|---|---|---|
| 28MC110 100 Hz Champion II | TX71B8RSNBC | TXDRAAA | TZAE14.0 | 28" B8 Silver | AVACBAA | 84553520 | 28" Tes 4:3 A66EMZ43X51 | 43642843 |
| | TX71B8RSNBB | TXBRAAA | TZAE14.0 | 28" B8 Silver | AVACBAA | 84553520 | 28" Phi 4:3 A66EAK075X44 | CRT28176 |
| 29MC100 100 Hz Gala | TX74X3RSNAR | TXHRAAA | TZAE14.0 | 29" X3 Silver | AVACBAA | 84501550 | 29" Sam 4:3 A68CQP891X100 | 43642914 |
| | TX74X3RSNAR | TXHRAAA | TZAE14.0 | 29" X3 Silver | AVACBAA | 84501550 | 29" Sam 4:3 A68CQP891X239 | 43642915 |

| Picture tube | Sam 29 4:3 A68QCP 891X100/239 | | Sam 29 4:3 VGA A68QCP 891X100/239 | | Tes 28 4:3 A66EMZ 43X51 | | Phi 28 4:3 A66EAK 075X44 | |
|---|---|---|---|---|---|---|---|---|
| Mainboard | TXHRAAA | | TXGRDAA | | TXDRAAA<br>TXDEAAA | | TXBRAAA<br>TXBEAAA | |
| PW-block | PW-130 | | PW-131 | | PW-135 | | PW-136 | |
| Rk 2 | 680k | 31660062 | 680k | 31660062 | - | | - | |
| Rk 14 | 180k | 31660027 | 180k | 31660027 | 390k | 31660059 | 220k | 31660033 |
| Rk 71 | 4R7 | 31860002 | 4R7 | 31860002 | - | | - | |
| Rk 72 | 1R5 | 31840004 | 1R5 | 31840004 | 3R0 | 31850007 | 3R9 | 31840006 |
| Rk 73 | 1R5 | 31840004 | 1R5 | 31840004 | 3R0 | 31850007 | 3R0 | 31850007 |
| Rk 132 | 100R | 31840002 | 100R | 31840002 | - | | - | |
| Rs 5 | 1R21 | 31450008 | 1R21 | 31450008 | 1R1 | 31450013 | 1R21 | 31450008 |
| Rs 12 | - | | - | | 150R | 31430290 | - | |
| Rs 13 | 820R | 31630044 | 820R | 31630044 | 2k2 | 31630050 | 820R | 31630044 |
| Rs 14,15,16 | 820R | 31630044 | 820R | 31630044 | 1k0 | 31514519 | 820R | 31630044 |
| Rs 17 | 820R | 31630044 | 820R | 31630044 | - | | 820R | 31630044 |
| Ck 3 | 220µF | 34229784 | 220µF | 34229784 | 470µF | 34220648 | 220µF | 34229784 |
| Ck 18 | 1n0 | 33460028 | 1n8 | 33450026 | 820pF | 33450039 | 820pF | 33450039 |
| Ck 27 | 27nF | 33450063 | 27nF | 33450063 | 30nF | 33450064 | 30nF | 33450064 |
| Ck 29 | 4µ7 | 33660002 | 4µ7 | 33660002 | 560nF | 33460021 | 560nF | 33460021 |
| Ck 32 | 56nF | 33450061 | 47nF | 33450036 | 56nF | 33450061 | 56nF | 33450061 |
| Ck 33 | 47nF | 33450036 | 47nF | 33450036 | - | | 56nF | 33450061 |
| Ck 34 | 220nF | 33240834 | 220nF | 33240834 | 330nF | 33450034 | 300nF | 22171302 |
| Ck 36 | 820pF | 33450039 | 820pF | 33450039 | - | | - | |
| Zdk 1 | BZX55B18 | 36770008 | BZX55B18 | 36770008 | - | | - | |
| Trk 2 | DST | 45360082 | DST | 45360082 | DST | 45360083 | DST | 45360083 |
| Trk 3 | AT4043 | 45380018 | AT4043 | 45380018 | Jumper J 300 | 15mm | Jumper J 300 | 15mm |
| Tro 2 | 45320063 | | 45320063 | | 45320069 | | 45320069 | |
| Lk 1 | FU1206D | 45161280 | FU1206D | 45161280 | TU1216 | 45161282A | FU1206E | 45161281 |
| J 108 | Jumper 12,5mm | | Jumper 12,5mm | | 1R0 | 31413904 | Jumper 12,5mm | |
| J 113 | Jumper 17,5mm | | Jumper 17,5mm | | 1R0 | 31413904 | Jumper 17,5mm | |
| J 181 | Jumper 20,0mm | | Jumper 20,0mm | | 1R0 | 31413904 | Jumper 20,0mm | |
| Pk 1 | - | | - | | 59M | 31280010 | 59M | 31280010 |
| Conn. plate | - | | - | | 84488470 | | 84488470 | |
| HH-DY wire | 96010243 | | 96010243 | | - | | - | |
| CRT module | HH131 | | HH131 | | HH135 | | HH135 | |
| U1 voltage | 133V | | 133V | | 145V | | 145V | |

## GB Variable components D Röhrenabhängige Bauteile S Komponentskillnader
## F Composants variables I Componenti che differiscono

| Picture tube | Sam 29 4:3 A68QCP 891X100 /239 | | Sam 29 4:3 VGA A68QCP 891X100 / 239 | | Tes 28 4:3 A66EMZ 43X51 | | Phi 28 4:3 A66EAK 075X44 | |
|---|---|---|---|---|---|---|---|---|
| Mainboard | TXHRAAA | | TXGRDAA | | TXDRAAA | | TXBRAAA | |
| | | | | | TXDEAAA | | TXBEAAA | |
| PW-block | PW-130 | | PW-131 | | PW-135 | | PW-136 | |
| **Multinorm parts (TX*R***)** | | | | | | | | |
| rq 14 | 470R | 31425817 | 470R | 31425817 | 470R | 31425817 | 470R | 31425817 |
| cq 1 | 56pF | 32125526 | 56pF | 32125526 | 56pF | 32125526 | 56pF | 32125526 |
| Jq 10 | 0R | 31425802 | 0R | 31425802 | 0R | 31425802 | 0R | 31425802 |
| TU 1 | Temic 4046 | 58231061 | Temic 4046 | 58231061 | Temic 4046 | 58231061 | Temic 4046 | 58231061 |
| **B/G norm parts (TX*E***)** | | | | | | | | |
| cq 1 | - | | - | | 2k7 | 31425821 | 2k7 | 31425821 |
| rq 2 | - | | - | | 10R | 31425820 | 10R | 31425820 |
| rq 13 | - | | - | | 15k | 31425835 | 15k | 31425835 |
| rq 14 | - | | - | | 100R | 31425852 | 100R | 31425852 |
| rq 15 | - | | - | | 680R | 31425860 | 680R | 31425860 |
| rq 17 | - | | - | | 1k5 | 31425826 | 1k5 | 31425826 |
| cq 3 | - | | - | | 100pF | 32125515 | 100pF | 32125515 |
| cq 7,11,12 | - | | - | | 27pF | 32125509 | 27pF | 32125509 |
| cq 13 | - | | - | | 39pF | 32125512 | 39pF | 32125512 |
| Lq 2 | - | | - | | 33uH | 45630014 | 33uH | 45630014 |
| Lq 5 | - | | - | | 22uH | 45630013 | 22uH | 45630013 |
| TU 1 | - | | - | | Temic 4006 | 58231063 | Temic 4006 | 58231063 |
| **Subwoofer parts (TX**D**)** | | | | | | | | |
| ra 3,4,5,8,9 | - | | 33k | 31425840 | - | | - | |
| ra 6 | - | | 560k | 31425896 | - | | - | |
| ra 7 | - | | 680k | 31490059 | - | | - | |
| ra 10,16 | - | | 100k | 31425844 | - | | - | |
| ra 11 | - | | 3k9 | 31425830 | - | | - | |
| ra 12,17 | - | | 47k | 31425836 | - | | - | |
| ra 15 | - | | 4k7 | 31425824 | - | | - | |
| ra 20 | - | | 1k5 | 31425830 | - | | - | |
| ra 21,26 | - | | 1k0 | 31425820 | - | | - | |
| ra 23 | - | | 10R | 31425810 | - | | - | |
| ra 29 | - | | 2k2 | 31425828 | - | | - | |
| ca 3,6,11,12 | - | | 100nF | 32190001 | - | | - | |
| Ca 4,14 | - | | 22µF | 34540021 | - | | - | |
| Ca 5 | - | | 1u0 | 33127108 | - | | - | |
| Ca 7 | - | | 470nF | 33124503 | - | | - | |
| ca 10 | - | | 150nF | 32525899 | - | | - | |
| ca 15 | - | | 100nF | 32536223 | - | | - | |
| Ca 18 | - | | 2200µF | 34226678 | - | | - | |
| ca 23 | - | | 22nF | 32536221 | - | | - | |
| Ca 29 | - | | 1000µF | 34220554 | - | | - | |
| ta 1,2,4 | - | | BC847B | 36145312 | - | | - | |
| ta 3 | - | | BC857B | 36145412 | - | | - | |
| da 1 | - | | BAS16 | 36560318 | - | | - | |
| zda 2 | - | | BZX84 12V | 36770019 | - | | - | |
| Ica 1,2 | - | | TDA2616 | 37631259 | - | | - | |
| Xa 1 | - | | 3-pin | 73190603 | - | | - | |
| **VGA parts (TX**D**** | | | | | | | | |
| Rk 85 | - | | 3R3 | 31850054 | - | | - | |
| rk 86,87 | - | | 56k | 31425842 | - | | - | |
| rk 88 | - | | 220k | 31425847 | - | | - | |
| rk 89,91 | - | | 1k0 | 31425820 | - | | - | |
| rk 90,92 | - | | 82R | 31425882 | - | | - | |
| rk 93 | - | | 18R | 31425807 | - | | - | |
| rk 94 | - | | 27k | 31425839 | - | | - | |
| rk 95 | - | | 100k | 31425844 | - | | - | |
| Ck 35 | - | | 1µ0 | 33124758 | - | | - | |
| ck 37 | - | | 100nF | 32190001 | - | | - | |
| Ck 38,39 | - | | 47µF | 34223251 | - | | - | |
| Tk 13 | - | | BC327 | 36147109 | - | | - | |
| Tk 14 | - | | BC337 | 36147138 | - | | - | |
| tk 18 | - | | BC847B | 36145312 | - | | - | |
| tk 15,16,17 | - | | BC857B | 36145412 | - | | - | |
| Dk 19,20 | - | | 1N4937 | 36575353 | - | | - | |
| Trk 4 | - | | TM2624 | 45350002 | - | | - | |

## ⒼⒷ Variable components Ⓓ Röhrenabhängige Bauteile Ⓢ Komponentskillnader
## Ⓕ Composants variables Ⓘ Componenti che differiscono

| AV module | AVCBBAA PIP / VGA / 3.SCART 3D-SOUND | | AVACBAA 2.SCART | |
|---|---|---|---|---|
| **PIP parts** | | | | |
| Rav 18, 21 | 470R | 31425817 | - | - |
| Rav 19, 22, 269 | 330R | 31425857 | - | - |
| Rav 55 | 0R0 | 31425802 | - | - |
| Rav 259, 261 | 100R | 31425852 | - | - |
| Rav 264, 266, 267, 268 | - | - | 0R | 31425802 |
| Cav 27 | 220nF | 32525900 | - | - |
| Cav 240, 250, 255 | 10µF | 34540025 | - | - |
| Cav 243, 244 | 10pF | 32125506 | - | - |
| Cav 245 | 1µ0 | 34540022 | - | - |
| Cav 246, 247, 248, 249, 251, 252, 253, 254, 256 | 10nF | 32536213 | - | - |
| Cav 260, 265 | 2µ2 | 34540023 | - | - |
| ICav 16 | SDA9489x | 37850225 | - | - |
| Lav 28, 29, 31 | 10µH | 45571699 | - | - |
| Zav 7 | 20,25MHz | 45730011 | - | - |
| **VGA parts** | | | | |
| Jav 15, 16 | - | - | 0R | 31425802 |
| Rav 156 | 10R | 31425810 | 10k | 31425833 |
| Rav 159, 260 | 47k | 31425836 | - | - |
| Rav 161, 273 | 10k | 31425833 | - | - |
| Rav 162, 163, 169, 171, 172, 173, 274 | 100k | 31425844 | - | - |
| Rav 164, 166 | 470R | 31425817 | - | - |
| Rav 167, 168 | 33k | 31425840 | - | - |
| Rav 227, 293, 294 | 100R | 31425852 | - | - |
| Rav 228, 291, 292 | 1k | 31425820 | - | - |
| Rav 229 | 560R | 31425818 | - | - |
| Rav 231 | 2k2 | 31425828 | - | - |
| Rav 232 | 270R | 31425855 | - | - |
| Rav 296, 297, 298 | 75R | 31425861 | - | - |
| Cav 109 | 390pF | 32145428 | - | - |
| Cav 126, 127, 128, 129 | 330nF | 32525901 | - | - |
| Cav 131, 132, 273, 274, 276 | 10nF | 32536213 | - | - |
| Cav 201 | 680nF | 32525905 | - | - |
| Cav 206 | 47pF | 32125508 | - | - |
| Cav 261 | 100nF | 32190001 | - | - |
| Tav 17, 19 | BC847B | 36145312 | - | - |
| Dav 7, 8 | LS4148 | 36560311 | - | - |
| Icav 8 | CD4052B | 37810014 | - | - |
| Icav 17 | 24LC21 | 37866003 | - | - |
| Lav 21, 22 | 10µH | 45640026 | - | - |
| Xav 7 | 2xRCA | 41910013 | VGA Bracket | 84481920 |
| Xav 8 | 15-PIN VGA | 41720017 | - | - |
| **3. Scart parts** | | | | |
| Rav 9, 11, 12, 13, 16, 17, 212, 213, 214 | 75R | 31425861 | - | - |
| Rav 14 | 15k | 31425835 | - | - |
| Rav 49 | 10k | 31425833 | - | - |
| Rav 56 | 22k | 31425837 | - | - |
| Rav 59 | 4k7 | 31425824 | - | - |
| Rav 86 | 47k | 31425836 | - | - |
| Rav 98, 107, 113, 116 | 100k | 31425844 | - | - |
| Rav 99, 108, 114, 117 | 470R | 31425817 | - | - |
| Rav 101, 102, 109, 111 | 220R | 31425815 | - | - |
| Rav 103, 104, 112, 143 | 220k | 31425847 | - | - |
| Rav 106, 144 | 100R | 31425852 | - | - |
| Cav 6, 67, 69 | 390pF | 32145428 | - | - |
| Cav 8 | 2µ2 | 34540023 | - | - |
| Cav 12 | 10µF | 34540025 | - | - |
| Cav 53, 62 | 22µF | 34540021 | - | - |
| Cav 54, 63 | 1n0 | 32125545 | - | - |
| Cav 56, 64 | 10nF | 32536213 | - | - |
| Cav 57, 66, 68, 94 | 330nF | 32525901 | - | - |
| Cav 61 | 100nF | 32190001 | - | - |
| Cav 153, 156, 158 | 220nF | 32525900 | - | - |
| Cav 154, 157, 159 | 330pF | 32125517 | - | - |
| Tav 8, 9 | BC847B | 36145312 | - | - |
| ICav 6 | MC33078 | 37470007 | - | - |
| Lav 3 | 2µ2 | 45640023 | - | - |
| Lav 13, 14, 16 | 3µ3 | 45640024 | - | - |
| Xav 6 | SCART 3 | 41910005 | - | - |
| **Sound processor** | | | | |
| Icav 7 | MSP3411G | 37430035 | MSP3410G | 37430023 |

# Ⓖ Spare parts Ⓓ Ersatzteile Ⓢ Reservdelar
# Ⓕ Pièces de rechange Ⓘ Parti di ricambio

**Note! Hinweis! Obs! Remarque ! Nota!**

⚠ Safety components in accordance with existing safety regulations. These components must be replaced only with original parts.
⚠ Sicherheitsbauteil im Sinn der Sicherheitsbestimmung. Diese Teile dürfen nur durch Originalteile ersetzt werden.
⚠ Skyddskomponenter. Dessa komponenter får endast ersättas med original reservdelar.
⚠ Composant de sécurité conformément aux règlementations de sécurité. Ces composants doivent être uniquement remplacés par des pièces d'origines.
⚠ Componenti di sicurezza ai sensi del regolamento di sicurezza. Queste componenti devono venir sostituite unicamente con parti originali.

* Version components
* Röhrenabhängige Bauteile
* Komponentskillnad
* Composants variables
* Componenti che differiscono

## Main board TX*****

| Item | | Description | Order no. |
|---|---|---|---|
| **RESISTORS** | | | |
| CQ | 1* | R SMD 2K7 0W10 | 31425821 |
| J | 33, 301 | R SMD 0R 0W10 | 31425802 |
| J | 108*, 113*, 181* | R METOX AX 1R0 0W7 | 31413904B |
| JQ | 10* | R SMD 0R 0W10 | 31425802 |
| RA | 2, 23*, 24, 25 | R SMD 10R 0W10 | 31425810 |
| RA | 3*, 4*, 5*, 8*, 9* | R SMD 33K 0W10 | 31425840 |
| RA | 6* | R SMD 560K 0W10 | 31425896 |
| RA | 7* | R SMD 680K 0W10 | 31490059 |
| RA | 10*, 16* | R SMD 100K 0W10 | 31425844 |
| RA | 11* | R SMD 3K9 0W10 | 31425830 |
| RA | 12*, 17* | R SMD 47K 0W10 | 31425836 |
| RA | 13, 14, 19 | R SMD 10K 0W10 | 31425833 |
| RA | 15*, 30, 31 | R SMD 4K7 0W10 | 31425824 |
| RA | 18 ⚠ | R METOX BK 1R0 4W0 | 31430013 |
| RA | 20* | R SMD 1K5 0W10 | 31425826 |
| RA | 21*, 22, 26* | R SMD 1K0 0W10 | 31425820 |
| RA | 27, 28, 29* | R SMD 2K2 0W10 | 31425828 |
| RK | 1, 44 | R SMD 100R 0W10 | 31425852 |
| RK | 2* | R CARF RAD 680K 0W25 | 31548989 |
| RK | 3, 5, 10, 12, 56, 57 | R SMD 2K7 0W10 | 31425821 |
| RK | 4, 52, 53, 59, 61, 95* | R SMD 100K 0W10 | 31425844 |
| RK | 6 | R SMD 2K20 0W10 | 31490098 |
| RK | 7, 11, 133 | R SMD 10K 0W10 | 31425833 |
| RK | 8 | R CARF RAD 15K 5% 0W25 | 31630033 |
| RK | 9 | R SMD 430R 0W10 | 31425879 |
| RK | 13 | R SMD 3K3 0W10 | 31425829 |
| RK | 14* | R CARF AX 180K 5% 0W25 | 31660027 |
| RK | 14* | R CARF AX 220K 5% 0W25 | 31660033 |
| RK | 14* | R CARF AX 390K 0W25 | 31660059 |
| RK | 15 | R SMD 5K1 0W10 | 31490453 |
| RK | 16 | R SMD 15K 0W10 | 31425835 |
| RK | 18 | R SMD 150R 0W10 | 31425812 |
| RK | 20 | R SMD 10R 0W10 | 31425810 |
| RK | 22 ⚠ | R FUS RAD 2R2 5% 0W25 | 31860003 |
| RK | 23, 25 | JUMPER 15mm | 85700150 |
| RK | 23-1 ⚠, 23-2 ⚠, 25-1 ⚠, 25-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| RK | 30 ⚠ | HK-RESISTOR 120R 5% | 13100232 |
| RK | 31, 33, 38, 39, 42 | R SMD 2K00 0W10 | 31490003 |
| RK | 32, 49, 89*, 91* | R SMD 1K0 0W10 | 31425820 |
| RK | 46, 47 | R SMD 820R 0W10 | 31425819 |
| RK | 48 | R SMD 470R 0W10 | 31425817 |
| RK | 50 | R METOX BK 0R47 1W5 | 31430011 |
| RK | 51, 82 | R SMD 2K2 0W10 | 31425828 |
| RK | 54 | R SMD 4K7 0W10 | 31425824 |
| RK | 55 ⚠ | R CARF RAD 0R22 5% 0W25 | 31514506 |
| RK | 58 | R METOX BK 0R33 1W5 | 31430010 |
| RK | 62 | R CARF AX 27R 5% 0W25 | 31660007 |
| RK | 63 ⚠, 68 ⚠ | R FUS RD 0R1 0W40 | 31850059 |
| RK | 64 ⚠ | R FUS RAD 27R 5% 0W25 | 31860001 |
| RK | 65, 67 | R CARF RAD 6K8 5% 0W25 | 31630029 |
| RK | 66 ⚠ | R FUS AX 0R47 5% 0W5 | 31850004 |
| RK | 66-1, 66-2 | CONN CRIPLET 1,3mm | 41930008 |
| RK | 69 | R SMD 1M0 0W10 | 31425801 |
| RK | 70, 77 | R CARF RAD 100K 5% 0W25 | 31630037 |
| RK | 71 ⚠* | R FUS RAD 4R7 5% 0W25 | 31860002 |
| RK | 72 ⚠*, 73 ⚠* | R FUS BK 1R5 0W70 | 31840004 |
| RK | 72 ⚠*, 73 ⚠* | R FUS AX 3R0 0W50 | 31850007 |
| RK | 72 ⚠* | R FUS BK 3R9 0W70 | 31840006 |
| RK | 75 ⚠ | R CARF AX 1R5 5% 0W5 | 31630014 |
| RK | 76 ⚠ | R FUS AX 2R2 0W50 | 31850056 |
| RK | 81 | R CARF AX 39K 0W25 | 31660054 |
| RK | 83 ⚠ | R FUS BLK 390R 10% 1W0 | 31850002 |
| RK | 85 ⚠* | R FUS RAD 3R3 5% 0W25 | 31850054 |
| RK | 86*, 87* | R SMD 56K 0W10 | 31425842 |
| RK | 88* | R SMD 220K 0W10 | 31425847 |
| RK | 90*, 92* | R SMD 82R 0W10 | 31425882 |
| RK | 93* | R SMD 18R 0W10 | 31425807 |
| RK | 94* | R SMD 27K 0W10 | 31425839 |
| RK | 103 | JUMPER 12,5mm | 85700125 |
| RK | 132⚠* | R FUS BLK 100R 10% 1W0 | 31840002 |
| RO | 1⚠ | R PTC BLK RS=9Ω | 31930011 |
| RO | 2, 3, 60 | R SMD 220K 0W10 | 31490457 |
| RO | 4 | R SMD 270K 0W10 | 31490458 |
| RO | 5 | R SMD 2K7 0W10 | 31425821 |
| RO | 6, 16 | R SMD 24K3 0W10 | 31490451 |
| RO | 8 | R SMD 6K8 0W10 | 31425831 |
| RO | 9 | R SMD 18K 0W10 | 31425813 |
| RO | 10, 11, 12, 14 | R SMD 1M0 0W10 | 31425801 |
| RO | 13 | R METOX AX 2K7 2W0 | 31414050A |
| RO | 15, 17 | R SMD2 0W10 | 31425887 |
| RO | 18, 35 | R SMD 2K2 0W10 | 31425828 |
| RO | 24 | R SMD 1K0 0W10 | 31425820 |
| RO | 25 | R SMD 150R 0W10 | 31425812 |
| RO | 26 | R METF AX 0R68 0W60 | 31440061 |
| RO | 28 | R CARF BLK 560R 0W50 AX | 31650003 |
| RO | 30 | R SMD 1K8 0W10 | 31425827 |
| RO | 32⚠ | R METF AX 10M 0W50 HV | 31460001 |
| RO | 33 | R SMD 820R 0W10 | 31425819 |
| RO | 38, 39, 40, 41 | R SMD 82R 0W10 | 31425882 |
| RO | 43 | R SMD 33K 0W10 | 31425840 |
| RO | 49 | R SMD 150K 0W10 | 31425846 |
| RO | 51 | R SMD 180K 0W10 | 31490012 |
| RO | 53 | R SMD 10K 0W10 | 31425833 |
| RO | 54 | R SMD 5K1 0W10 | 31490453 |
| RO | 55 | R CARF AX 1K5 5% 0W25 | 31660017 |
| RO | 58 | R SMD 100K 0W10 | 31425844 |
| RO | 59 | R WRLAC AX 0R18 5% 2W5 | 31360046B |
| RO | 59-1 ⚠, 59-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| RO | 61 | R SMD 470R 0W10 | 31425817 |
| RO | 62 | R CARF AX 2K2 0W25 | 31548618 |
| RO | 67 | JUMPER 5mm | 85700050 |
| RQ | 1 | R SMD 22K 0W10 | 31425837 |
| RQ | 2* | R SMD 10R 0W10 | 31425810 |
| RQ | 3, 4, 5, 6, 7 | R SMD 4K7 0W10 | 31425824 |
| RQ | 12 | R SMD 330R 0W10 | 31425857 |
| RQ | 13* | R SMD 15K 0W10 | 31425835 |
| RQ | 14* | R SMD 100R 0W10 | 31425852 |
| RQ | 14* | R SMD 470R 0W10 | 31425817 |
| RQ | 15* | R SMD 680R 0W10 | 31425860 |
| RQ | 16 | R SMD 1K0 0W10 | 31425820 |
| RQ | 17* | R SMD 1K5 0W10 | 31425826 |
| RS | 1 | R SMD 2K2 0W10 | 31425828 |
| RS | 2 | R SMD 1K5 0W10 | 31425826 |
| RS | 3 | R METF RAD 1R54 1% 0W60 | 31450012 |
| RS | 4 | R SMD 270K 0W10 | 31425805 |
| RS | 5* | R METF RAD 1R10 0W60 | 31450013 |
| RS | 5*, 8 | R METF RAD 1R21 1% 0W60 | 31450008 |
| RS | 9 | R CARF RAD 27R 5% 0W25 | 31630021 |

| Item | | Description | Order no. |
|---|---|---|---|
| RS | 10, 11 | R SMD 12R 0W10 | 31490058 |
| RS | 12* | R METOX BK 150R 2W0 | 31430290 |
| RS | 13* | R CARF RAD 2K2 5% 0W25 | 31630050 |
| RS | 13*, 14*, 15*, 16*, 17* | R CARF RAD 820R 5% 0W25 | 31630044 |
| RS | 14*, 15*, 16* | R CARF RAD 1K0 5% 0W25 | 31514519 |
| RS | 21 | R SMD 10K 0W10 | 31425833 |
| RS | 22 | R SMD 47K 0W10 | 31425836 |
| RS | 23 | R SMD 12K1 0W10 | 31490051 |
| RS | 24, 27 | R SMD 5K11 0W10 | 31490454 |
| RS | 25, 26 | R SMD 6K8 0W10 | 31425831 |
| **CAPACITORS** | | | |
| CA | 1, 2 | CMKT RAD 220nF 63V | 33127108 |
| CA | 3*, 6*, 11*, 12*, 13 | C CER2 SMD 100nF 25V | 32190001 |
| CA | 4*, 14*, 17 | C ECAP RAD 22µF 35V | 34540021 |
| CA | 5* | C ECAP RAD 1µF 63V | 34540022 |
| CA | 7* | CMKT RAD 470nF 63V | 33124503 |
| CA | 8, 9 | C CER1 SMD 390pF 50V | 32145428 |
| CA | 10* | C CER2 SMD 150nF 16V | 32525899 |
| CA | 15*, 19 | C CER2 SMD 100nF 50V | 32536223 |
| CA | 18*, 20 | C ECAP BLK 2200µF 35V | 34226678 |
| CA | 21, 22, 23* | C CER2 SMD 22nF 50V | 32536221 |
| CA | 24, 25 | C ECAP BLK 470µF 35V | 34220648 |
| CA | 29* | C ECAP BLK 1000µF 35V | 34220554 |
| CK | 1 | C CER1 SMD 220pF 50V | 32125513 |
| CK | 2, 41 | C CER2 SMD 10nF 50V | 32536213 |
| CK | 3*, 6 | C ECAP RAD 220µF 25V | 34229784 |
| CK | 3* | C ECAP BLK 470µF 35V | 34220648 |
| CK | 4 | CMKT RAD 1µ5 63V | 33120948 |
| CK | 5 | CMKT RAD 100nF 63V | 33127106 |
| CK | 9 | C CER1 SMD 56pF 50V | 32125526 |
| CK | 10, 28 | CMKT RAD 220nF 63V | 33127108 |
| CK | 12 | C ECAP RAD 100µF 16V | 34223252 |
| CK | 13 | C CER1 SMD 330pF 50V | 32125517 |
| CK | 14 | C ECAP RAD 47µF 63V | 34540053 |
| CK | 15 | C ECAP BLK 2200µF 25V | 34510005 |
| CK | 16 | CMKT RAD 22nF 400V | 33150965 |
| CK | 17 ⚠, 23 ⚠ | CMKC BLK 330nF 250V | 33660001 |
| CK | 24 | CMKP BLK 470pF 1K6V | 33460011 |
| CK | 18*, 36* | CMKP BLK 820pF 1K5V | 33450039 |
| CK | 18* | CMKP BLK 1nF 1K6V | 33460028 |
| CK | 18* | CMKP BLK 1n8 1K6V | 33460026 |
| CK | 18-1 ⚠, 18-2 ⚠, 24-1 ⚠, 24-2 ⚠, 36-1 ⚠, 36-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| CK | 19 | C ECAP BLK 4µ7 250V HV | 34610001 |
| CK | 20 | CMKT BLK 100nF 250V | 33360003 |
| CK | 21 | C CER2/3 RAD 2n2 20% 500V | 32780003 |
| CK | 22 | C CER2/3 RAD 330pF 10% 500V | 32780002 |
| CK | 25 | CMKP BLK 15nF 100V | 33460003 |
| CK | 26 ⚠ | CMKP BLK 10nF 1K6V | 33450037 |
| CK | 26-1 ⚠, 26-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| CK | 27 ⚠* | CMKP BLK 27nF 630V | 33450063 |
| CK | 27 ⚠* | CMKP BLK 30nF 3,5% 630V | 33450064 |
| CK | 27-1 ⚠, 27-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| CK | 29 ⚠* | CMKP BLK 560nF 250V | 33460021 |
| CK | 29 ⚠* | CMKC BLK 4µ7 63V | 33660002 |
| CK | 29-1 ⚠, 29-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| CK | 30 | CMKT RAD 470nF 63V | 33127123 |
| CK | 30-1 ⚠, 30-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| CK | 31-1 ⚠, 31-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| CK | 32*, 33 ⚠* | CMKP BLK 47nF 400V | 33450036 |
| CK | 32* | CMKP BLK 56nF 400V | 33450061 |
| CK | 32-1 ⚠, 32-2 ⚠, 33-1 ⚠, 33-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| CK | 33 ⚠* | C M(KP) BLK 56nF 400V | 33450061 |
| CK | 34 ⚠* | CMKP BLK 220nF 250V | 33240834 |
| CK | 34 ⚠* | C MKP10 300nF 5% 250V | 22171302 |
| CK | 34 ⚠* | CMKP BLK 330nF 250V | 33450034 |
| CK | 34-1 ⚠, 34-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| CK | 35* | CMKT RAD 1µF 63V | 33124758 |
| CK | 37* | C CER2 SMD 100nF 25V | 32190001 |
| CK | 38*, 39* | C ECAP RAD 47µF 16V | 34223251 |
| CO | 1 ⚠, 4 ⚠ | C CER2/3 BLK 1nF 20% 400VAC | 32610922 |
| CO | 2 ⚠ | CMKT BLK 220nF 400V | 33360002 |
| CO | 3 ⚠, 7 ⚠ | C MP/P BLK 470nF 275VAC | 33260006 |
| CO | 5, 10, 14, 48 | C CER1 SMD 1nF 50V | 32125545 |
| CO | 6 | C CER1 SMD 56pF 50V | 32125526 |
| CO | 8 | CMKP RAD 1nF 100V | 33622914 |
| CO | 9 | C CER2 SMD 3n3 50V | 32536207 |
| CO | 11 | C CER2 RAD 220pF 500V | 32790062 |
| CO | 12, 50, 51, 52, 53, 55, 56, 60, 63, 65 | C CER2 SMD 100nF 25V | 32190001 |
| CO | 13 | C ECAP RAD 47µF 63V | 34540053 |
| CO | 15 | C MKP BLK 4n7 1K6V | 33450019 |
| CO | 15-1 ⚠, 15-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| CO | 19 | C ECAP BLK 220µF 450V HV | 34540102 |
| CO | 20 | CMKT RAD 1µF 63V | 33124758 |
| CO | 21 | CMKP BLK 220pF 1K6V | 33460009 |
| CO | 22 | CMKT BLK 10nF 630V | 33380023 |
| CO | 23 ⚠ | C CER2/3 BLK 1n5 20% 400VAC | 32960002 |
| CO | 24 | C CER2/3 RAD 330pF 10% 500V | 32780002 |
| CO | 25, 26, 27 | C CER2/3 RAD 1nF 10% 500V | 32780004 |
| CO | 29, 54 | CMKT BLK 100nF 250V | 33360003 |
| CO | 31 | C ECAP BLK 2200µF 35V | 34226678 |
| CO | 32 | C ECAP BLK 1000µF 35V | 34510010 |
| CO | 33, 34, 39, 40, 41, 42 | CMKT RAD 100nF 63V | 33127106 |
| CO | 36 | C ECAP BLK 220µF 250V HV | 34610007 |
| CO | 43, 44 | C ECAP BLK 1000µF 16V | 34510004 |
| CO | 45 | C ECAP RAD 10µF 63V | 34540025 |
| CO | 49 | C CER2 SMD 10nF 50V | 32536213 |
| CO | 58, 59, 62, 64 | C ECAP RAD 100µF 16V | 34223252 |
| CQ | 1* | C CER1 SMD 56pF 50V | 32125526 |
| CQ | 2 | C CER1 SMD 1nF 50V | 32125545 |
| CQ | 3* | C CER1 SMD 100pF 50V | 32125515 |
| CQ | 4 | C ECAP RAD 10µF 63V | 34540025 |
| CQ | 5, 6, 8, 9 | C CER2 SMD 100nF 25V | 32190001 |
| CQ | 7*, 11*, 12* | C CER1 SMD 27pF 50V | 32125509 |
| CQ | 10 | C ECAP RAD 100µF 16V | 34223252 |
| CQ | 13* | C CER1 SMD 39pF 50V | 32125512 |
| CS | 1 | CMKT RAD 100nF 63V | 33127106 |
| CS | 3 | CMKT BLK 47nF 100V | 33380019 |
| CS | 4 | CMKP RAD 10nF 250V | 33450057 |
| CS | 5 | CMKT RAD 470nF 63V | 33127123 |
| CS | 6 | C CER2 SMD 100nF 25V | 32190001 |
| CS | 7 | C ECAP RAD 47µF 63V | 34540053 |
| CS | 8, 10, 11, 12 | C CER2 SMD 10nF 50V | 32536213 |
| **TRANSISTORS** | | | |
| TA | 1*, 2*, 4*, 5 | TR NPN SMD BC847B 45V | 36145312 |
| TA | 3* | TR PNP SMD BC857B 45V | 36145412 |
| TK | 1, 2, 4, 9, 15*, 16*, 17* | TR PNP SMD BC857B 45V | 36145412 |
| TK | 3 | TR NPN PWR BLK 2SD2012 | 36270004 |
| TK | 3, 12 | HEATSINK SPRING | 79400021 |
| TK | 6, 18*, 25 | TR NPN SMD BC847B 45V | 36145312 |
| TK | 8 | TR NPN RAD BC637 60V 1A | 36220003 |
| TK | 10 | N-FET PWR BLK BUK457-400B | 36370003 |
| TK | 11 | TR NPN RAD BF422 250V | 36125217 |
| TK | 12 | TR NPN PWR BLK BU2525AF | 36270003 |
| TK | 13* | TR PNP RAD BC327-25 45V | 36147109 |
| TK | 14* | TR NPN RAD BC337-25 45V | 36147138 |
| TO | 1 | N-FET STP7NC70Z 800V 6,8A | 36370018 |
| TO | 1-6 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| TO | 1-2 ⚠, 1-3 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| TO | 1 | INSULATOR FOIL 3KV | 49000087 |
| TO | 1 | HEATSINK SPRING | 79400021 |
| TQ | 1 | TR NPN SMD BC847B 45V | 36145312 |
| TS | 5, 6, 7, 8, 9, 10 | TR PNP SMD BC857B 45V | 36145412 |
| **DIODES** | | | |
| DA | 1* | DI SMD BAS16 75V 250mA | 36560318 |
| DK | 2, 3, 5 | DI SMD BAS16 75V 250mA | 36560318 |
| DK | 9, 12 | DI RECT PWR AX BYV36C 600V | 36575452 |
| DK | 11, 14, 19*, 20* | DI RECT PWR AX 1N4937 600V | 36575353 |
| DK | 13 | DI AX RECT BYT56J 600V | 36240001B |
| DK | 15 | DI RECT PWR AX BYV26C 600V | 36610005 |
| DK | 16 | DI BK RECT BYM357X | 36621564 |

| Item | | Description | Order no. |
|---|---|---|---|
| DK | 16 | HEATSINK SPRING | 79400021 |
| DK | 16-1 ⚠, 16-2 ⚠, 16-3 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| DO | 1 | DI AX RECT BYM36E 1K0V | 36621562B |
| DO | 1-1 ⚠, 1-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| DO | 2, 6 | DI AX RECT BYM36E 1K0V | 36621562 |
| DO | 2 | 2 x COOLING PLATE | 81402597 |
| DO | 2-1 ⚠, 2-2 ⚠, 6-1 ⚠, 6-2 ⚠, 16-1 ⚠, 16-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| DO | 3, 4 | DI RECT PWR AX BY527 1K25V | 36610001 |
| DO | 3-1 ⚠, 3-2 ⚠, 4-1 ⚠, 4-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| DO | 6 | DI AX RECT BYM36E 1K0V | 36621562B |
| DO | 7-1 ⚠, 7-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| DO | 9, 21 | DI SMD BAS16 75V 250mA | 36560318 |
| DO | 12 | DI BK RECT FMC-G28SL 800V | 36621567 |
| DO | 12, 13 | HEATSINK SPRING | 79400021 |
| DO | 13 | DI BK RECT STTA506F 600V | 36621563 |
| DO | 12-1 ⚠, 12-2 ⚠, 13-1 ⚠, 13-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| DO | 14 | DI SMD BAS20 150V 200mA | 36560320 |
| DO | 16 | DI AX RECT BYM36E 1K0V 2,9A | 36621562 |
| DO | 16 | 2 x COOLING PLATE | 81402597 |
| DO | 19 | IC VREF TL431CLP | 37410012 |
| DO | 17, 18 | DI RECT AX BYW98 200V 3A | 36575470 |
| DO | 17, 18 | 2 x COOLING PLATE | 81402596 |
| DO | 2, 6 | | |
| DO | 22, 26 | DI AX SCHT SB560 60V 5,0A | 36420005 |
| DO | 22-1 ⚠, 22-2 ⚠, 26-1 ⚠, 26-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| DS | 1 | DI SMD BAS16 75V 250mA | 36560318 |
| **ZENERS** | | | |
| ZDA | 2* | Z DI SMD BZX84A 12V 1% | 36770019 |
| ZDK | 1* | Z DI AX BZX55B 18V 2% | 36770008 |
| ZDK | 2 | Z DI SMD BZX84B 24V 2% | 36780022 |
| ZDK | 3, 10 | Z DI SMD BZX84B 12V 2% | 36780008 |
| ZDK | 4 | Z DI SMD BZX84C 51V 5% | 36770035 |
| ZDK | 5 | Z DI SMD BZX84C 2V4 5% | 36780005 |
| ZDO | 1, 11 | Z DI SMD BZX84B 12V 2% | 36780008 |
| ZDQ | 1, 1 | Z DI SMD BZX84B 30V 2% | 36770033 |
| **INTEGRATED CIRCUITS** | | | |
| ICA | 1*, 2* | IC AUDIO TDA2616 12+12W | 37631259 |
| ICA | 1, 2 | HEATSINK SPRING | 79400021 |
| ICO | 1 | IC PWR CONT TDA16846 | 37450019 |
| ICO | 3 ⚠ | IC OPTO COUPL SFH615A-2 | 36950009 |
| ICO | 5 | IC V-REG L4941BV 5V 1,0A | 37681840 |
| ICO | 6 | IC V-REG PQ05RH11 5V 1,5A | 37460008 |
| ICO | 8 | IC V-REG PQ3RD13 3V3 1,0A | 37460033 |
| ICO | 11 | IC V-REG L7812CV 12V 1,5A | 37681748 |
| ICO | 5, 6, 8, 11 | HEATSINK SPRING | 79400021 |
| ICS | 1 | IC DEFL TDA8354Q/N1I/N1E S1 | 37450017 |
| ICS | 1 | HEATSINK SPRING | 79400021 |
| **FUSES** | | | |
| FO | 1 ⚠ | FUSE F2,5A MINIATURE | 43770004 |
| FO | 1-1 ⚠, 1-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| FO | 2 ⚠, 4 ⚠, 7 ⚠, 8 ⚠ | FUSE T2,0A MINIATURE | 43770005 |
| **TRANSFORMERS** | | | |
| TRK | 1 | TRF FM2543 | 45380013 |
| TRK | 2 ⚠* | DST TRF ELDOR 1372,8001C | 45360082 |
| TRK | 2 ⚠* | DST TRF ELDOR 1372,9018 M | 45360083 |
| TRK | 2-5 ⚠, 2-7 ⚠, 2-9 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| TRK | 2-1 ⚠, 2-2 ⚠, 2-16 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| TRK | 3* | TRF AT4043/67A FOR DYN.FOC | 45380018 |
| TRK | 3-1 ⚠, 3-3 ⚠, 3-4 ⚠, 3-6 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| TRK | 4* | TRF TM2624 HOR. SHIFT | 45350002 |
| TRK | 4-2 ⚠, 4-5 ⚠, 4-9 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| TRO | 2 ⚠* | MAINS TRF 2322,0019B/TM2672 | 45320063 |
| TRO | 2 ⚠* | MAINS TRF 2322,0030 M | 45320069 |
| TRO | 2-10 ⚠, 2-19 ⚠, 2-21 ⚠, 2-22 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| **COILS** | | | |
| L | 1, 2, 3 | EMI SUPPRES BEAD 3,5x9 | 45620007 |
| L | 1-1 ⚠, 1-2 ⚠, 2-1 ⚠, 2-2 ⚠, 3-1 ⚠, 3-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| LK | 1* | COIL LIN BLK 8...26µH FU1206D | 45161280 |
| LK | 1* | COIL LIN BLK 8...26µH FU1206E | 45161281 |
| LK | 1* | COIL LIN BLK TU1216 | 45161282A |
| LK | 1-1 ⚠, 1-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| LK | 2 | COIL BLK 280µH FJ1311 | 45610004 |
| LK | 2-1 ⚠, 2-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| LK | 3 | COIL BLK 1,9mH | 45610018 |
| LK | 4 | EMI SUPPRES BEAD 3,5x9 | 45620007 |
| LK | 5, 6 | COIL BLK 47µH 7% 2,0A | 45620035 |
| LK | 5-1 ⚠, 5-2 ⚠, 6-1 ⚠, 6-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| LO | 1 ⚠ | COIL MAINS BLK TJ1853 | 45390013 |
| LO | 1-1 ⚠, 1-2 ⚠, 1-3 ⚠, 1-4 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| LO | 3 | EMI SUPPRES BEAD 3,5x9 | 45620007 |
| LO | 8 | COIL BLK 1,5mH 1,7A 250V | 45390020 |
| LO | 8-1 ⚠, 8-4 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| LO | 10 | COIL AX 10µH 1200mA | 45571698 |
| LO | 5, 6, 7 | COIL BLK 10µH 1200mA RAD | 45571699 |
| LO | 9-1 ⚠, 9-2 ⚠, 9-3 ⚠, 9-4 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| LO | 11-4 ⚠, 11-6 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| LQ | 1 | COIL BLK 10µH 1200mA RAD | 45571699 |
| LQ | 2* | COIL RAD 33µH 150mA | 45630014 |
| LQ | 3, 4 | COIL AX 10µH 1200mA | 45571698 |
| LQ | 5* | COIL RAD 22µH 170mA | 45630013 |
| TRK | 5 ⚠ | COIL BLK RAD 68µH 15% E/W | 45380024 |
| TRK | 5-1 ⚠, 5-3 ⚠, 5-4 ⚠, 5-6 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| **OTHERS** | | | |
| A | 6, 7, 8, 9 | GROUNDING SPRING | 84880130 |
| HCK | 29-1 ⚠, 34-1 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| HCO | 15-1 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| HXKT | 1-1 ⚠, 2-1 ⚠, 3-1 ⚠, 4-1 ⚠, 7-1 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| J | 108* | JUMPER | 12,5mm |
| J | 113* | JUMPER | 17,5mm |
| J | 181* | JUMPER | 20mm |
| J | 194-1 ⚠, 194-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| J | 195-1 ⚠, 195-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| J | 198-1 ⚠, 198-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| J | 200-1 ⚠, 200-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| J | 202-1 ⚠, 202-2 ⚠ | CONN CRIPLET 1,3mm | 41930008 |
| PK | 1 ⚠* | R POT FOCUS 59M 2W0 GDE | 31280010 |
| PO | 1 | R TRIM HOR 2K2 0W1 | 31110970 |
| TU | 1* | TUNER TEMIC 4046 Multi | 58231061 |
| TU | 1* | TUNER TEMIC 4006 B/G | 58231063 |
| TRK | 3* | JUMPER J 300 | 15mm |
| XA | 1* | ROW CONN 3-PIN SNAP-IN | 73190603 |
| XA | 2 | ROW CONN 4-PIN SNAP-IN | 73190604 |
| XAV | 1 | CONN ROW 9-PIN | 41710068 |
| XAV | 2, 3 | CONN ROW 19-PIN | 41710073 |
| XK | 3 | ROW CONN 5-PIN | 41710001 |
| XK | 3-1 ⚠, 3-2 ⚠, 3-3 ⚠, 3-4 ⚠, 3-5 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| XK | 6 | CONN HEADER 6-PIN | 41710002 |
| XK | 7-1 ⚠, 7-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| XKT | 1 | BLADE CONN 2,8mm | 41930001 |
| XO | 1 | ROW CONN 2-PIN | 73184750 |
| XO | 1-1 ⚠, 1-2 ⚠ | CONN CRIPLET 1,9mm | 41930009 |
| XO | 2 | STIFTW,KA, 5,08 SW | 73190702 |

| Item | | Description | Order no. |
|---|---|---|---|
| XS | 1 | ROW CONN 3-PIN SNAP-IN | 73190603 |
| XT | 1, 2 | CONN ROW 7-PIN SNAP-IN | 41710077 |
| | ANODE CABLE: | | |
| ⚠ | - FOR ELDOR DST 570mm+chimney (28") | | 96008868 |
| ⚠ | - FOR ELDOR DREAM DST 630mm+chimney (29") | | 96008869 |
| | ANODE CLIP 4mm ELDOR | | 54041417 |
| | ANT CABLE ASS 200mm RCA/IEC plug with ferrite | | 47780009 |
| ⚠ | ELDOR-DST CABLE 280mm (28") | | 96011091 |
| ⚠ | FOCUS CABLE 410mm (29") | | 96010220 |
| ⚠ | FOCUS CABLE 1,2 410mm (28") | | 96010142 |
| ⚠ | FOCUS CABLE 1,2 410mm (29") | | 96010230 |
| | FOCUS CLIP 3mm OREGA | | 54041366 |
| | FOR CABLE HOLDING 11mm | | 65220402 |
| | SCREEN CABLE 460mm | | 96010240 |
| * | HH-DY WIRE | | 96010243 |
| | PK/Z WIRE | | 96010059 |
| | SDY WIRE 550mm | | 96008120 |
| | SVM CABLE | | 96010243 |
| | WIREBLUG 2-PIN FC>POW | | 96010080 |

## AV***** (AV100) Signal module

### RESISTORS

| | | | |
|---|---|---|---|
| JAV | 2, 4, 9, 11, 14, 15, 16, 23, 24, 26, 27, 28, 32, 35, 36, 38, 39, 41, 42, 44, 45, 47, 48 | R SMD 0R 0W10 | 31425802 |
| RAV | 1, 2, 3, 6, 9, 11, 12, 13, 16, 17, 29, 31, 202, 203, 204, 206, 207, 208, 209, 211, 212, 213, 214, 296, 297, 298, 303, 311, 318 | R SMD 75R 0W10 | 31425861 |
| RAV | 4, 14, 32 | R SMD 15K 0W10 | 31425835 |
| RAV | 7, 18, 21, 44, 63, 99, 108, 114, 117, 119, 122, 126, 128, 132, 134, 138, 141, 164, 166, 223, 224, 226, 246, 337 | R SMD 470R 0W10 | 31425817 |
| RAV | 8, 51, 61, 69, 93, 94, 158, 228, 247, 256, 257, 258, 279, 291, 292 | R SMD 1K0 0W10 | 31425820 |
| RAV | 19, 22, 269, 342 | R SMD 330R 0W10 | 31425857 |
| RAV | 23, 24, 26, 34, 42, 43, 82, 101, 102, 109, 111, 280, 306, 313, 321, 333 | R SMD 220R 0W10 | 31425815 |
| RAV | 27, 33, 41, 46, 49, 57, 58, 64, 66, 67, 68, 76, 87, 89, 156, 161, 191, 193, 218, 248, 273, 276, 281, 286, 287, 288, 353 | R SMD 10K 0W10 | 31425833 |
| RAV | 28 ⚠ | R FUS RAD 4R7 5% 0W25 | 31860002 |
| RAV | 36, 60, 98, 107, 113, 116, 118, 121, 124, 127, 131, 133, 137, 139, 162, 163, 169, 171, 172, 173, 274 | R SMD 100K 0W10 | 31425844 |
| RAV | 37, 56, 284, 289 | R SMD 22K 0W10 | 31425837 |
| RAV | 38, 356 | R SMD 27K 0W10 | 31425839 |
| RAV | 39, 88, 231, 282, 304, 312, 319, 327, 334, 336 | R SMD 2K2 0W10 | 31425828 |
| RAV | 47 ⚠ | R FUS RD 47R 0W25 | 31860006 |
| RAV | 48, 84, 86, 159, 260 | R SMD 47K 0W10 | 31425836 |
| RAV | 52, 53, 92, 96, 97, 232, 283, 285, 216, 217, 277, 278, 348, 349 | R SMD 270R 0W10 | 31425855 |
| RAV | 54, 91, 299, 307, 314, 322, 341 | R SMD 390R 0W10 | 31425816 |
| RAV | 55, 264, 266, 267, 268 | R SMD 0R 0W10 | 31425802 |
| RAV | 59, 71, 72, 77, 83, 244 | R SMD 4K7 0W10 | 31425824 |
| RAV | 62 | R SMD 150R 0W10 | 31425812 |
| RAV | 73, 74, 78, 81, 106, 123, 129, 136, 142, 144, 183, 184, 186, 187, 188, 189, 222, 227, 235, 259, 261, 293, 294, 300, 301, 308, 316, 323, 331, 332 | R SMD 100R 0W10 | 31425852 |
| RAV | 103, 104, 112, 143 | R SMD 220K 0W10 | 31425847 |
| RAV | 146, 147, 148, 149, 151, 152, 153, 154 | R SMD 1M0 0W10 | 31425801 |
| RAV | 156 | R SMD 10R 0W10 | 31425810 |
| RAV | 167, 168, 196, 201, 344, 346 | R SMD 33K 0W10 | 31425840 |
| RAV | 192, 198 | R SMD 47R 0W10 | 31425809 |
| RAV | 194, 197, 351 | R SMD 68K 0W10 | 31425838 |
| RAV | 199 | R CARF RAD 180R 5% 0W25 | 31630026 |
| RAV | 229, 249, 251, 252 | R SMD 560R 0W10 | 31425818 |
| RAV | 237, 238 | R CARF AX 270R 0W25 | 31548624 |
| RAV | 239, 241, 242, 290 | R SMD 3K9 0W10 | 31425830 |
| RAV | 243, 253, 254 | R SMD 1K5 0W10 | 31425826 |
| RAV | 265, 302, 309, 317, 324 | R SMD 22R 0W10 | 31425849 |
| RAV | 295 | R SMD 1K8 0W10 | 31425827 |
| RAV | 326 | R SMD 33R 0W10 | 31425808 |
| RAV | 338 | R SMD 910R 0W10 | 31425883 |
| RAV | 339 | R SMD 430R 0W10 | 31425879 |
| RAV | 343 | R SMD 300R 0W10 | 31425856 |
| RAV | 347, 354 | R SMD 18K 0W10 | 31425813 |
| RAV | 352 | R SMD 6K81 0W10 | 31490455 |
| RAV | 355 | R NTC SMD 33K | 31910002 |

### CAPACITORS

| | | | |
|---|---|---|---|
| CAV | 1, 2, 3, 4, 6, 7, 9, 11, 21, 22, 67, 69, 72, 77, 82, 87, 109, 111, 164, 173, 179 | C CER1 SMD 390pF 50V | 32145428 |
| CAV | 8, 23, 26, 28, 41, 260, 265 | C ECAP RAD 2µ2 63V | 34540023 |
| CAV | 12, 102, 106, 107, 142, 167, 187, 216, 219, 233, 240, 250, 255, 263, 268, 279, 280, 289 | C ECAP RAD 10µF 63V | 34540025 |
| CAV | 13 | C CER1 SMD 220pF 50V | 32125513 |
| CAV | 14, 215 | C CER1 SMD 10pF 50V | 32125506 |
| CAV | 16 | C (M)KT RAD 1µF 63V | 33124758 |
| CAV | 17, 24, 56, 64, 118, 121, 131, 132, 238, 239, 241, 246, 247, 248, 249, 251, 252, 253, 254, 256, 257, 258, 259, 273, 274, 276, 285, 287, 288 | C CER2 SMD 10nF 50V | 32536213 |
| CAV | 18 | C ECAP RAD 470µF 16V | 34220551 |
| CAV | 19, 29, 20, 32, 33, 34, 37, 38, 39, 44, 47, 49, 51, 61, 101, 103, 112, 139, 143, 166, 188, 212, 213, 214, 217, 218, 221, 223, 228, 229, 232, 236, 237, 242, 261, 270, 271, 272, 278, 282, 283, 284, 286, 294 | C CER2 SMD 100nF 25V | 32190001 |

| Item | Description | Order no. |
|---|---|---|
| CAV 27, 146, 148, 151, 153, 156, 158, 162, 171, 182 | C CER2 SMD 220nF 16V | 32525900 |
| CAV 31 | C CER1 SMD 22pF 50V | 32180027 |
| CAV 36, 168, 178 | C ECAP RAD 47µF 50V | 34540028 |
| CAV 42, 43, 202, 203, 226, 227 | C CER1 SMD 33pF 50V | 32125507 |
| CAV 46, 48, 52, 117, 119, 222 | C ECAP RAD 100µF 25V | 34540020 |
| CAV 53, 62, 73, 78, 83, 88, 234 | C ECAP RAD 22µF 35V | 34540021 |
| CAV 54, 63, 74, 79, 84, 89, 90, 91, 92, 93, 113, 116, 122, 123, 124, 176, 269 | C CER1 SMD 1nF 50V | 32125545 |
| CAV 57, 58, 59, 66, 68, 71, 76, 81, 86, 94, 126, 127, 128, 129 | C CER2 SMD 330nF 16V | 32525901 |
| CAV 96, 97 | C CER1 SMD 1p2 50V | 32180008 |
| CAV 98, 99, 105, 108, 206, 293 | C CER1 SMD 47pF 50V | 32125508 |
| CAV 104 | C ECAP RAD 3µ3 63V | 34540029 |
| CAV 137, 138, 245 | C ECAP RAD 1µF 100V HV | 34229675 |
| CAV 141, 231 | C ECAP RAD 47µF 16V | 34223251 |
| CAV 144, 147, 149, 152, 154, 157, 159 | C CER1 SMD 330pF 50V | 32125517 |
| CAV 161, 169, 177, 191, 193 | C CER2 SMD 47nF 50V | 32536222 |
| CAV 163, 172, 181, 189, 194 | C CER1 SMD 1n5 50V | 32190025 |
| CAV 183, 201 | C CER2 SMD 680nF 10V | 32525905 |
| CAV 184, 186 | C CER1 SMD 6p8 50V | 32190009 |
| CAV 192, 196, 197 | C CER2 SMD 68nF 50V | 32790052 |
| CAV 199, 291 | C CER1 SMD 82pF 50V | 32125531 |
| CAV 224 | C (M)KT RAD 470nF 63V | 33127123 |
| CAV 243, 244 | C CER1 SMD 39pF 50V | 32125512 |
| CAV 262, 267, 281 | C CER1 SMD 2n2 50V | 32190026 |
| CAV 264, 266 | C CER1 SMD 27pF 50V | 32125509 |
| CAV 275 | C CER1 SMD 100pF 50V | 32125515 |
| CAV 277 | C ECAP RAD 4µ7 63V | 34540024 |
| CAV 297 | C CER2 SMD 470nF 16V | 32525903 |
| **TRANSISTORS** | | |
| TAV 1 | TR NPN RAD BC547B 45V | 36220002 |
| TAV 2, 3, 7, 8, 9, 11, 12, 13, 16, 17, 18, 19, 20, 22, 23, 26, 27, 29, 31, 33, 34, 37, 38, 39, 41, 42, 43, 44 | TR NPN SMD BC847B 45V | 36145312 |
| TAV 4, 24, 25, 28, 32, 35, 36 | TR PNP SMD BC857B 45V | 36145412 |
| TAV 14 | TR PNP RAD BC557B 45V | 36146424 |
| **DIODES** | | |
| DAV 1 | DI SMD BAV70 70V 215mA | 36561954 |
| DAV 2, 3, 7, 8 | DI SMD LS4148 75V 200mA | 36490002 |
| DAV 9, 11, 12, 13 | DI SMD BAS16 75V 250mA | 36560318 |
| **ZENERS** | | |
| ZDAV 1, 2, 4 | Z DI SMD BZX84C 8V2 5% | 36780003 |
| ZDAV 3 | Z DI AX BZX83C 10V 5% | 36770002 |
| ZDAV 5 | Z DI SMD BZX84B 5V6 2% | 36780021 |
| ZDAV 6 | Z DI SMD BZX84C 3V3 5% | 36770018 |
| **INTEGRATED CIRCUITS** | | |
| ICAV 1 | IC VIDEO TEA6417 | 37440012 |
| ICAV 2 | **CURRENT SOFTWARE VERSION 11.05.2001** | **TZAE14,0** |
| ICAV 2 | IC SOCKET | 41520751 |
| ICAV 3 | IC-TL7705ACDR | 37460011 |
| ICAV 4 | IC LOGIC SMD 74HCT0814 | 37810023 |
| ICAV 5 | IC UC SMD SDA30C264M2 | 37857014 |
| ICAV 6, 10 | IC OPAMP SMD MC33078D8 | 37470007 |
| ICAV 7 | IC AUDIO MSP3411G-PP-B8 | 37430035 |
| ICAV 7 | IC AUDIO MSP3410G-PP-B6 | 37430037 |
| ICAV 8 | IC LOGIC SMD 4052BT | 37810014 |
| ICAV 11 | IC VIDEO SMD VPC3230D-QA-B3 | 37850222 |
| ICAV 12 | IC VIDEO SMD SDA9400 | 37850224 |
| ICAV 13 | IC VIDEO SMD SDA5275-3P | 37857044 |
| ICAV 15 | IC DRAM SMD 4Mx4 | 37688004 |
| ICAV 16 | IC VIDEO SMD SDA9489X | 37850225 |
| ICAV 17 | IC EEPROM SMD 128x8 | 37866003 |
| ICAV 18 | IC VIDEO SMD DDP3310B-PT-F6 | 37850234 |
| ICAV 19 | IC EEPROM SMD 4Kx8 | 37866011 |
| **COILS** | | |
| LAV 1, 2, 3, 4 | COIL SMD 2,2µH 30mA | 45640023 |
| LAV 8 | COIL RAD 10µH 600mA | 45571680 |
| LAV 9, 10, 11, 12, 13, 14, 16 | COIL SMD 3,3µH 30mA | 45640024 |
| LAV 17, 18, 19, 26, 27, 28, 29, 30, 31, 32 | COIL BLK 10µH 1200mA RAD | 45571699 |
| LAV 23 | COIL SMD 6,8µH 15mA | 45640025 |
| LAV 21, 22, 24, 33 | COIL SMD 10µH 15mA | 45640026 |
| LFAV 1 | EMIFIL RAD 4n7 1,0A | 45558419 |
| **CRYSTALS** | | |
| ZAV 1 | CRYSTAL RAD 12,00 MHz | 45730005 |
| ZAV 2 | CRYSTAL BLK 18,432 MHz | 45710011 |
| ZAV 4 | CRYSTAL BLK 20,250 MHz | 45730011 |
| ZAV 6 | CRYSTAL BLK 20,48 MHz | 45730004 |
| ZAV 7 | CRYSTAL RAD 20,250 MHz | 45710006 |
| ZAV 8 | CRYSTAL BLK 5,000 MHz | 45730012 |
| **OTHERS** | | |
| XAF 1 | CONN HEADER 20-PIN | 41710071 |
| XAH 1 | CONN HEADER 10-PIN | 41710070 |
| XAV 1 | MODULE CONN 9-PIN | 41720002 |
| XAV 2, 3 | CONN MODULE 19-PIN | 41720048 |
| XAV 4 | SCART CONN BLACK | 41450292 |
| XAV 5 | SCART CONN BLUE | 41910004 |
| XAV 6 | SCART CONN ORANGE | 41910005 |
| XAV 7 | CONN RCA VERT WH+RE | 41910013 |
| XAV 8 | CONN D-TYPE 15-PIN | 41720017 |
| XAV 9 | CONN MODULAR 6-PIN | 41910002 |
| JAV 6, 7, 8 | JUMPER 20mm | 85600102 |
| JAV 13, 29, 40 | JUMPER 12,5mm | 85600078 |
| JAV 46 | JUMPER 17,5mm | 85600092 |
| W 1, 2 | JUMPER 75mm | 85500855 |
| | A/V MODULE BRACKET | 84481920 |
| | SIGNAL BOX BOTTOM | 84860590 |
| | SIGNAL BOX LID | 84860600 |
| | LOCKING SCREWS | 41720017 |

## FC100 Control unit module

| Item | Description | Order no. |
|---|---|---|
| **RESISTORS** | | |
| J 2, 5, 48, 49, 31, 33, 38 | R SMD 0R 0W10 | 31425802 |
| JFC 10 | R SMD 0R 0W25 | 31425601 |
| JFC 14 | R SMD 0R 0W10 | 31425802 |
| JFC 15, 16, 17 | R SMD 0R 0W10 | 31425802 |
| RFC 1, 2, 10, 31 | R SMD 47K 0W10 | 31425836 |
| RFC 3, 4 | R SMD 75R 0W10 | 31425861 |
| RFC 5 | R SMD 470R 0W10 | 31425817 |
| RFC 6, 11, 16 | R SMD 15K 0W10 | 31425835 |
| RFC 9, 12 | R SMD 1K0 0W10 | 31425820 |
| RFC 13 | R SMD 330R 0W25 | 31425614 |
| RFC 14, 17 | R SMD 100K 0W10 | 31425844 |
| RFC 15, 19, 20 | R SMD 10K 0W10 | 31425833 |

| Item | Description | Order no. |
|---|---|---|
| RFC 21, 22 | R CARF AX 2K2 5% 0W25 | 31660037 |
| RFC 26, 27 | R CARF AX 100R 0W25 | 31660049 |
| RFC 37 | R SMD 10K 0W25 | 31425635 |
| RFC 41 | R SMD 390R 0W10 | 31425816 |
| RFC 43, 44, 45, 48, 49 | R SMD 1M0 0W10 | 31425801 |
| RFC 47 | R SMD 270R 0W10 | 31425855 |
| RCF 52 | R CARF BLK 4K7 0W50 AX | 31650462 |
| **CAPACITORS** | | |
| CFC 1⚠, 2⚠ | C MP/P BLK 100nF 275VAC | 33260003 |
| CFC 3 | C ECAP RAD 470µF 10V | 34221242 |
| CFC 4 | C ECAP RAD 100µF 10V | 34222576 |
| CFC 5, 7 | C CER2 SMD 4n7 50V | 32536210 |
| CFC 8, 20 | C ECAP RAD 10µF 35V | 34540027 |
| CFC 10, 13 | C CER1 SMD 390pF 50V | 32145428 |
| CFC 11, 16, 17, 18, 19, 32 | C CER2 SMD 10nF 50V | 32536213 |
| CFC 14, 15 | C ECAP RAD 100µF 25V | 34540020 |
| CFC 21, 22 | C CER1 RAD 15pF 100V | 32180003 |
| CFC 27 | C ECAP RAD 2µ2 400V | 34540097 |
| CFC 35 | C CER2 SMD 100nF 25V | 32190001 |
| CFC 36 | C CER2 RAD 47pF 1K0V | 32790054 |
| **TRANSISTORS** | | |
| TFC 1, 2, 4 | TR PNP SMD BC857B 45V | 36145412 |
| TFC 3, 5 | TR NPN SMD BC847B 45V | 36145312 |
| **DIODES** | | |
| DFC 1 | DI RECT PWR AX BYV36C | 36575452 |
| DFC 4 | LED RAD RED 5mm | 36910004 |
| DFC 9 | JUMPER 12,5mm | 85600078 |
| DFC 10 | DI RECT PWR AX BY527 | 36610001 |
| DFC 11-1 | CONN CRIPLET 1,9mm | 41930009 |
| DFC 11 | DI TRC BLK BT137 600V 8A | 36104002 |
| DFC 17 | LED RAD GREEN 5mm | 36910005 |
| **ZENERS** | | |
| DZFC 1 | Z DI AX BZX55B 4V3 2% | 36770031 |
| **INTEGRATED CIRCUITS** | | |
| ICFC 1 | IC PWR CONT TNY253P | 37410032 |
| ICFC 2⚠ | IC OPTO TRIAC TLP763JF | 36950010 |
| ICFC 3⚠ | IC OPTO COUPL SFH615A-2 | 36950009 |
| **FUSES** | | |
| FFC 1⚠ | FUSE PRIMARY T3,15A HB | 43751652 |
| FFC 1, 1 | FUSEHOLDER CLIPS | 41540001 |
| **TRANSFORMERS** | | |
| MFC 2⚠ | MAINS TRF 2262.0029B/TM2673 | 45310006 |
| **COILS** | | |
| LCF 1, 2 | COIL AX 40µH 2000mA | 45620057 |
| LFC 10 | EMI SUPPRES BEAD 3,5X9 | 45620007 |
| LFC 5, 6 | COIL SMD 2,2µH 30mA | 45640023 |
| LFC 3, 4, 7, 8, 9 | COIL SMD 10µH 15mA | 45640026 |
| MFC 1⚠ | COIL MAINS BLK TJ1853 | 45390013 |
| **OTHERS** | | |
| HFC 1 | IR-RECEIVER TSOP1738 3-PIN | 58880977 |
| SWFC 1, 2, 3, 4 | TACTILE SWITCH 4 IN ROW | 41150685 |
| UFC 1⚠ | MAINS SWITCH 250V 4/80A | 41210004 |
| XA 5 | SIGN.CABLE 20-PIN, 600mm | 96010197 |
| XFC 1 | ROW CONN 2-PIN | 73184750 |
| XFC 6-3 | CONN RCA 3 IN ROW | 41430747 |
| XFC 9-4 | CONN S-VHS | 41452244 |
| XFC 10 | CONN PHONO 3,5mm JACK | 41910001 |

| Item | Description | Order no. |
|---|---|---|
| XO 2 | ROW CONN 2-PIN | 73184750 |
| | HEATSINK FOR TRIAC | 84830520 |
| | CONN CRIPLET 1,9mm | 41930009 |
| ⚠ | COVER FOR CAM. CONN. | 84488890 |
| | MODULE SUPPORT | 81408167 |

## HH131 CRT module*

| | | |
|---|---|---|
| **RESISTORS** | | |
| J 19 | R CARF AX 270R 5% 0W25 | 31660011 |
| J 22 | R SMD 0R 0W10 | 31425802 |
| RH 1 | R SMD 3K0 0W10 | 31490062 |
| RH 2 | R SMD 1K00 0W10 | 31490056 |
| RH 3, 12, 16, 60 | R SMD 0R 0W10 | 31425802 |
| RH 4, 13, 17 | R METF AX 68K 2% 1W0/73 | 31440008 |
| RH 6, 7, 8, 9, 11, 14 | R SMD 1K5 0W10 | 31425826 |
| RH 18, 19, 21, 22, 23, 24 | R COMP AX 470R 0W25 | 31595565 |
| RH 26 | R CARF RAD 33K 5% 0W25 | 31630036 |
| RH 27 | R CARF AX 4M7 5% 0W25 | 31660029 |
| RH 28, 33 | R COMP AX 1K5 0W50 | 31594639 |
| RH 31 | R SMD 68R 0W10 | 31425876 |
| RH 36 | R SMD 100K 0W10 | 31425844 |
| RH 37, 52 | R SMD 2K2 0W10 | 31425828 |
| RH 38 | R SMD 470R 0W10 | 31425817 |
| RH 39, 59 | R SMD 1K0 0W10 | 31425820 |
| RH 40 | R SMD 100R 0W10 | 31425852 |
| RH 41, 53 | R SMD 6K8 0W10 | 31425831 |
| RH 42, 54 | R CARF RAD 390R 5% 0W25 | 31630041 |
| RH 43, 56 | R CARF RAD 3R3 5% 0W25 | 31514515 |
| RH 44⚠ | R FUS RD 330R 0W25 | 31860005 |
| RH 46, 48 | R FUS RAD 4R7 5% 0W25 | 31860002 |
| RH 47, 49 | R SMD 18K 0W10 | 31425813 |
| RH 50 | R SMD 560R 0W10 | 31425818 |
| RH 51 | R CARF RAD 220R 0W25 | 31630051 |
| RH 58 | R SMD 330R 0W10 | 31425857 |
| **CAPACITORS** | | |
| CH 1 | C ECAP RAD 47µF 16V | 34223251 |
| CH 2, 3, 7, 8, 12, 13, 36, 38 | C CER2 SMD 22nF 50V | 32536221 |
| CH 4, 9, 14, 19 | C (M)KT RAD 22nF 250V | 33380002 |
| CH 5 | C CER1 SMD 68pF 50V | 32125516 |
| CH 6, 11, 16 | C CER2 SMD 1nF 50V | 32536203 |
| CH 17 | C ECAP BLK 4µ7 250V HV | 34610001 |
| CH 18 | C ECAP BLK 10µF 250V HV | 34610002 |
| CH 22 | C (M)KT BLK 8n2 1K5V | 33360007 |
| CH 27, 29, 43 | C ECAP RAD 10µF 63V | 34540025 |
| CH 28 | C ECAP RAD 100µF 25V | 34540020 |
| CH 31 | C ECAP RAD 47µF 63V | 34540053 |
| CH 32, 33, 34, 37, 39 | C CER2 SMD 100nF 50V | 32536223 |
| CH 41 | C CER1 SMD 680pF 50V | 32190014 |
| CH 42 | C CER1 SMD 56pF 50V | 32125526 |
| CH 44 | C CER2 SMD 10nF 50V | 32536213 |
| CH 46 | C CER2 SMD 4n7 50V | 32536210 |
| **TRANSISTORS** | | |
| TH 1 | TR NPN RAD BF422 250V | 36125217 |
| TH 2 | TR PNP SMD BC857B 45V | 36145412 |
| TH 3 | TR NPN SMD BF840 40V 25mA | 36120750 |
| TH 4 | TR PNP BLK 2SA1837 230V 1A | 36270021 |
| TH 6 | TR PNP SMD BF824 30V 25mA | 36120751 |
| TH 7 | TR NPN BLK 2SC4793 230V 1A | 36270020 |
| **DIODES** | | |
| DH 1, 2 | DI RECT PWR AX BYV36C 600V | 36575452 |
| DH 3, 4, 5 | DI SMD BAS16 75V 250mA | 36560318 |
| DH 6, 7, 8 | DI SMD BAV103 200V 250mA | 36561950 |

| Item | Description | Order no. |
|---|---|---|
| **INTEGRATED CIRCUITS** | | |
| ICH 1, 2, 3 | IC VIDEO TDA6111Q-N4C | 37440004 |
| **COILS** | | |
| LH 1 | COIL AX 10µH 10% 230mA | 45620003 |
| LH 6, 7 | COIL AX 10µH 1200mA | 45571698 |
| **OTHERS** | | |
| CRT 1, 2 | BLADE CONN 2,8mm | 41930001 |
| S 1 | SPARK GAP 2,0KV +/-500V | 41555001 |
| SOH 2 ⚠ | METALLO 0330 7700 44 | 41510006 |
| UG 2 | BLADE CONN 2,8mm | 41930001 |
| XH 1 | WIRE BUNDLE 6-PIN 370mm | 96010019 |
| XH 2 | RGB CABLE 10-PIN | 96010198 |
| XH 3 | CONN ROW 3-PIN | 41710083 |
| | INS SLEEVE 2,5mm | 47310003 |

## HH135 CRT module*

| | | |
|---|---|---|
| **RESISTORS** | | |
| J 19 | R CARF AX 270R 5% 0W25 | 31660011 |
| J 22 | R SMD 0R 0W10 | 31425802 |
| RH 1 | R SMD 3K0 0W10 | 31490062 |
| RH 2 | R SMD 1K00 0W10 | 31490056 |
| RH 3, 12, 16, 60 | R SMD 0R 0W10 | 31425802 |
| RH 4, 13, 17 | R METF AX 68K 2% 1W0/73 | 31440008 |
| RH 6, 7, 8, 9, 11, 14 | R SMD 1K5 0W10 | 31425826 |
| RH 18, 19, 21, 22, 23, 24 | R COMP AX 470R 0W25 | 31595565 |
| RH 26 | R CARF RAD 33K 5% 0W25 | 31630036 |
| RH 27 | R CARF AX 4M7 5% 0W25 | 31660029 |
| RH 28, 33 | R COMP AX 1K5 0W50 | 31594639 |
| RH 31 | R SMD 68R 0W10 | 31425876 |
| RH 36 | R SMD 100K 0W10 | 31425844 |
| RH 37 | R SMD 2K2 0W10 | 31425828 |
| RH 38 | R SMD 470R 0W10 | 31425817 |
| RH 39, 59 | R SMD 1K0 0W10 | 31425820 |
| RH 40 | R SMD 100R 0W10 | 31425852 |
| **CAPACITORS** | | |
| CH 1 | C ECAP RAD 47µF 16V | 34223251 |
| CH 2, 3, 7, 8, 12, 13 | C CER2 SMD 22nF 50V | 32536221 |
| CH 4, 9, 14, 19 | C (M)KT RAD 22nF 250V | 33380002 |
| CH 5 | C CER1 SMD 68pF 50V | 32125516 |
| CH 6, 11, 16 | C CER2 SMD 1nF 50V | 32536203 |
| CH 17 | C ECAP BLK 4µ7 250V HV | 34610001 |
| CH 18 | C ECAP BLK 10µF 250V HV | 34610002 |
| CH 22 | C (M)KT BLK 8n2 1K5V | 33360007 |
| CH 27, 43 | C ECAP RAD 10µF 63V | 34540025 |
| CH 28 | C ECAP RAD 100µF 25V | 34540020 |
| CH 46 | C CER2 SMD 4n7 50V | 32536210 |
| **DIODES** | | |
| DH 1, 2 | DI RECT PWR AX BYV36C 600V | 36575452 |
| DH 3, 4, 5 | DI SMD BAS16 75V 250mA | 36560318 |
| DH 6, 7, 8 | DI SMD BAV103 200V 250mA | 36561950 |
| **TRANSISTORS** | | |
| TH 1 | TR NPN RAD BF422 250V | 36125217 |
| TH 2 | TR PNP SMD BC857B 45V | 36145412 |
| **INTEGRATED CIRCUITS** | | |
| ICH 1, 2, 3 | IC VIDEO TDA6111Q-N4C | 37440004 |

| Item | Description | Order no. |
|---|---|---|
| **COILS** | | |
| LH 1 | COIL AX 10µH 10% 230mA | 45620003 |
| LH 6 | COIL AX 10µH 1200mA | 45571698 |
| **OTHERS** | | |
| CRT 1, 2 | BLADE CONN 2,8mm | 41930001 |
| S 1 | SPARK GAP 2,0KV +/-500V | 41555001 |
| SOH 1 ⚠ | METALLO 0330 5500 34 | 41554034 |
| UG 2 | BLADE CONN 2,8mm | 41930001 |
| XH 1 | WIRE BUNDLE 6-PIN 370mm | 96010019 |
| XH 2 | RGB CABLE 10-PIN | 96010198 |
| | INS SLEEVE 2,5mm | 47310003 |

## PP100 Twin tuner pip module

| | | |
|---|---|---|
| **RESISTORS** | | |
| J 6, 7, 10, 13 | R SMD 0R 0W10 | 31425802 |
| RPP 3, 8, 24, 26, 41, 42, 43, 44, 47 | R SMD 10K 0W10 | 31425833 |
| RPP 5, 6 | R SMD 270R 0W10 | 31425855 |
| RPP 7, 22, 25, 30, 31, 32, 45, 48 | R SMD 100K 0W10 | 31425844 |
| RPP 10 | R SMD 330R 0W10 | 31425857 |
| RPP 11 | R SMD 150R 0W10 | 31425812 |
| RPP 12, 13 | R SMD 22K 0W10 | 31425837 |
| RPP 14, 16, 27, 28, 29, 50 | R SMD 470R 0W10 | 31425817 |
| RPP 15 | R SMD 12K 0W10 | 31425834 |
| RPP 17 | R SMD 1K0 0W10 | 31425820 |
| RPP 18, 20 | R SMD 33K 0W10 | 31425840 |
| RPP 19, 40, 46 | R SMD 100R 0W10 | 31425852 |
| RPP 21, 23 | R SMD 180K 0W10 | 31490012 |
| RPP 33 | R SMD 680K 0W10 | 31490059 |
| RPP 34, 38 | R SMD 120K 0W10 | 31425845 |
| RPP 35 | R SMD 27K 0W10 | 31425839 |
| RPP 36, 37 | R SMD 1M0 0W10 | 31425801 |
| RPP 39 | R SMD 5K6 0W10 | 31425825 |
| RPP 49 | R SMD 8K2 0W10 | 31425832 |
| **CAPACITORS** | | |
| CPP 1, 2, 12, 16, 22, 34, 35, 36 | C CER2 SMD 100nF 25V | 32190001 |
| CPP 3, 4, 20 | C CER1 SMD 18pF 50V | 32125520 |
| CPP 5, 8, 23, 24, 25, 26, 27, 28 | C ECAP RAD 22µF 35V | 34540021 |
| CPP 6 | C CER2 SMD 22nF 25V | 32525705 |
| CPP 7 | C ECAP RAD 4µ7 63V | 34540024 |
| CPP 9 | C ECAP RAD 2µ2 63V | 34540023 |
| CPP 10, 14 | C ECAP RAD 1µF 63V | 34540022 |
| CPP 11, 18, 31 | C CER2 SMD 10nF 50V | 32536213 |
| CPP 13 | C CER2 SMD 4n7 50V | 32536210 |
| CPP 15, 17 | C CER2 SMD 1µF 10V | 32525907 |
| CPP 19 | C ECAP RAD 100µF 16V | 34223252 |
| CPP 21 | C ECAP RAD 47µF 16V | 34223251 |
| CPP 32, 33 | C CER1 SMD 2n2 50V | 32190026 |
| **TRANSISTORS** | | |
| TPP 1 | TR NPN SMD BC847B 45V | 36145312 |
| TPP 2, 3, 4, 5 | N-FET SMD 2N7002 60V | 36380002 |
| TTP 6 | TR NPN SMD BC847B 45V | 36145312 |
| **DIODES** | | |
| DPP 1, 2 | DI SMD LL4148 75V 200mA | 36560311 |

| Item | Description | Order no. |
|---|---|---|
| **INTEGRATED CIRCUITS** | | |
| ICPP 1 | IC V-REG L78M08CV 8V 0,5A | 37460003 |
| ICPP 2 | IC VIDEO SMD TDA6930X28 | 37450009 |
| ICPP 3, 4 | IC OPAMP SMD TL082CD8 | 37470003 |
| **COILS** | | |
| LPP 3 | COIL ADJ 150nH | 45530020 |
| LPP 1, 2 | COIL BLK 10µH 1200mA RAD | 45571699 |
| LPP 4, 5, 6 | COIL SMD 10µH 15mA | 45640026 |
| **FILTERS** | | |
| ZPP 1 | SAW FILTER OFW G3962M BG | 45740003 |
| ZPP 2 | FIL CER BLK TPS 5,5 MB | 45558410 |
| **OTHERS** | | |
| TU 1 | TUNER TEMIC 4702PH5 | 58231040 |
| X 3 | RCA CONN RED+WH+BLACK | 41910019 |
| X 1, 2 | CONN MODULE 7-PIN | 41720049 |
| | ANT CABLE 80mm IEC-MALE/FEMALE | 47780006 |

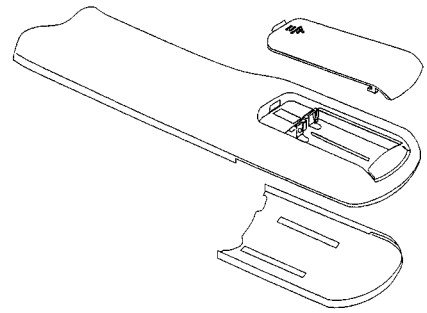
## TA100 Audio line output module

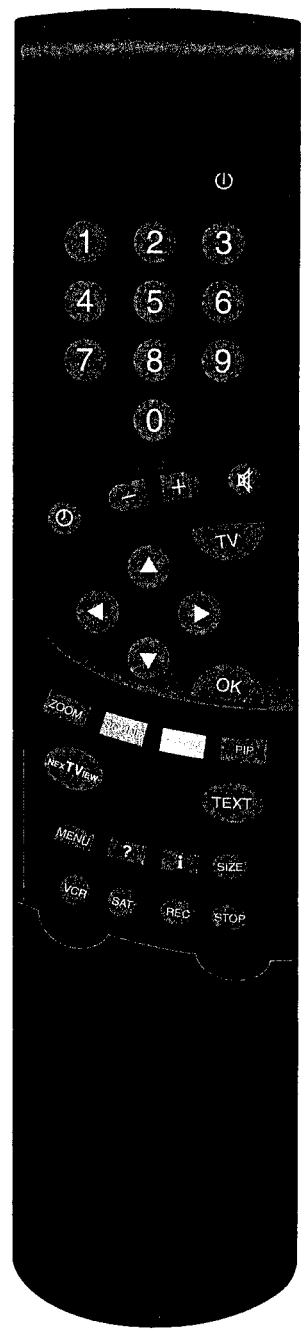
| | | |
|---|---|---|
| **RESISTORS** | | |
| J 1, 4 | R SMD 0R 0W10 | 31425802 |
| RTA 1, 2, 25, 27, 30, 32, 35 | R SMD 10K 0W10 | 31425833 |
| RTA 3, 4, 11, 12, 17, 34, 36 | R SMD 100K 0W10 | 31425844 |
| RTA 5, 6 | R SMD 180K 0W10 | 31490012 |
| RTA 7, 8 | R SMD 33K 0W10 | 31425840 |
| RTA 9, 10, 16, 31 | R SMD 470R 0W10 | 31425817 |
| RTA 18, 19 | R SMD 1M0 0W10 | 31425801 |
| RTA 20 | R SMD 680K 0W10 | 31490059 |
| RTA 21, 22 | R SMD 120K 0W10 | 31425845 |
| RTA 23 | R SMD 27K 0W10 | 31425839 |
| RTA 24, 26, 33 | R SMD 100R 0W10 | 31425852 |
| RTA 28 | R SMD 5K6 0W10 | 31425825 |
| RTA 29 | R SMD 12K 0W10 | 31425834 |
| **CAPACITORS** | | |
| CTA 1, 2, 3, 19, 21, 22 | C ECAP RAD 22µF 16V | 34223250 |
| CTA 7, 8 | C CER1 SMD 2n2 50V | 32190026 |
| CTA 9, 12, 15, 17 | C CER2 SMD 100nF 25V | 32190001 |
| CTA 13 | C CER2 SMD 10nF 50V | 32536213 |
| CTA 16 | C ECAP RAD 47µF 16V | 34223251 |
| CTA 20 | C ECAP RAD 100µF 16V | 34223252 |
| **TRANSISTORS** | | |
| TTA 1, 2, 3, 4 | N-FET SMD 2N7002 60V | 36380002 |
| TTA 5 | TR NPN SMD BC847B 45V | 36145312 |
| **INTEGRATED CIRCUITS** | | |
| ICTA 1, 2 | IC OPAMP SMD TL082CD8 | 37470003 |
| **COILS** | | |
| LTA 1, 2, 3 | COIL SMD 10µH 15mA | 45640026 |
| **OTHERS** | | |
| J 3 | JUMPER 20mm | 85600102 |
| XA 2 | CONN MODULE 7-PIN | 41720049 |
| XT 5 | RCA CONN RED+WH+BLACK | 41910019 |

| Item | Order no. |
|---|---|

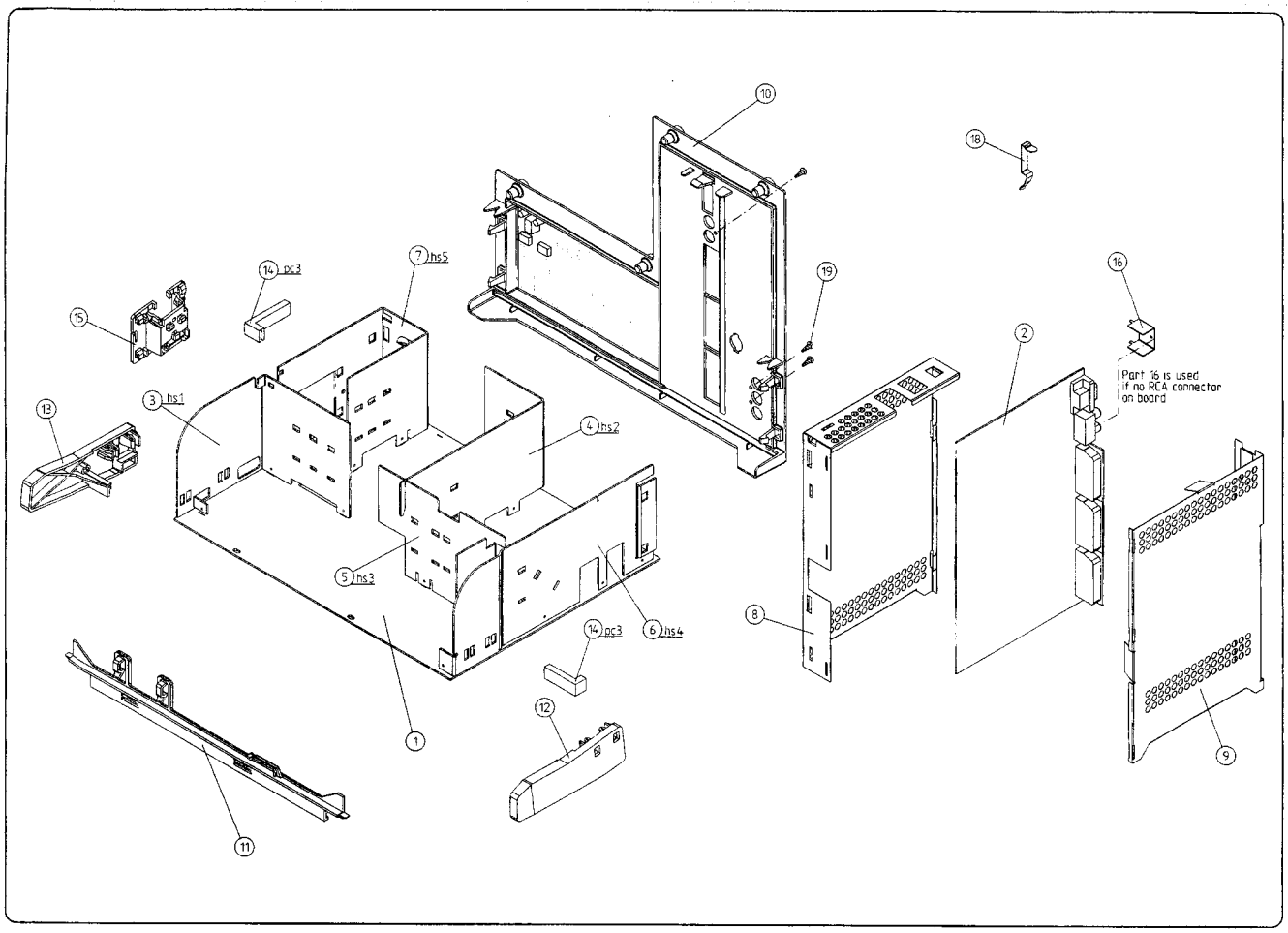
## RC*702 Remote Control

| | |
|---|---|
| REMOTE CONTROL FINLUX MDB | RCF702 |
| REMOTE CONTROL LUXOR MDB | RCL702 |
| REMOTE CONTROL SALORA MDB | RCS702 |
| BATTERY COVER FOR RC*702 MDB | 80418127 |
| SLIDE COVER FOR RCF702 | 84432820 |
| SLIDE COVER FOR RCL702 | 84432840 |
| SLIDE COVER FOR RCS702 | 84432830 |





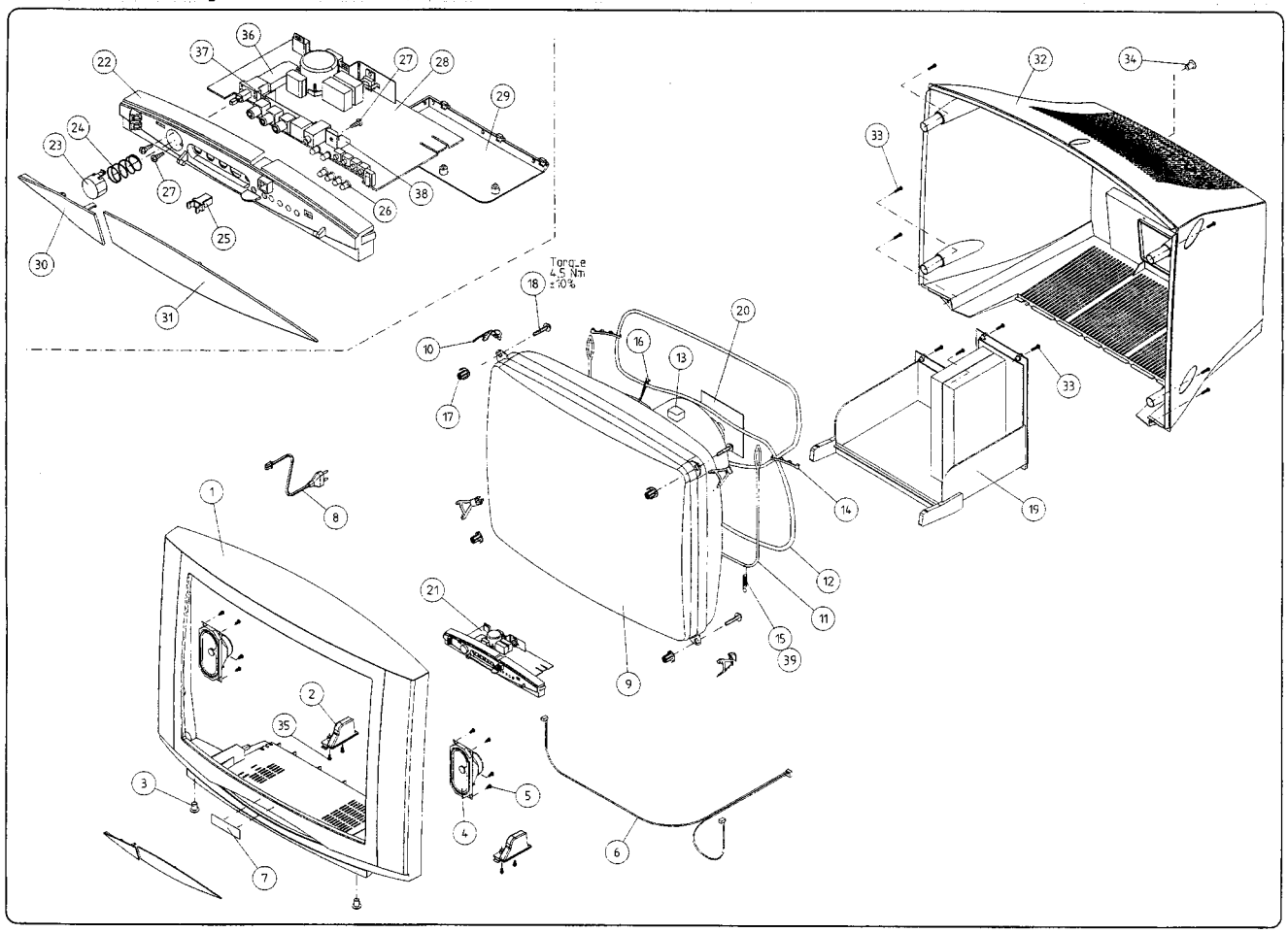
# Mechanical parts, chassis




| Item | Description | Order no. |
|---|---|---|
| | **MODULES** | |
| 1 | MAIN BOARD | TX***** |
| | *(see section "Variable components", page 43)* | |
| 2 | SIGNAL MODULE (AV100) | AV***** |
| | *(see section variable components, page 45)* | |
| | **METAL PARTS** | |
| 3 | HEAT SINK 1 | 84830830 |
| 4 | HEAT SINK 2 | 84830910 |
| 5 | HEAT SINK 3 | 84830920 |
| 6 | HEAT SINK 4 | 84830860 |
| 7 | HEAT SINK 5 | 84830900 |
| 8 | SIGNAL BOX BOTTOM | 84860590 |
| 9 | SIGNAL BOX LID | 84860600 |
| 16 | AV MODULE BRACKET | 84481920 |
| | **PLASTIC PARTS** | |
| 10 | COVER PLATE FOR CONNECTOR AREA | |
| | A (3 x SCART, VGA + AUDIO IN) | 84488800 |
| | - Finlux 74X110 MC 100 Hz | |
| | B (3 x SCART, NO VGA + AUDIO IN) | 84401100 |
| | C (2 x SCART, NO VGA + AUDIO IN) | 84405110 |
| | - Finlux 71V100 MC 100 Hz | |
| | - Finlux 71V102 MC 100 Hz | |
| | - Finlux 74X100 MC 100 Hz | |
| | - Luxor 70FS10Si | |
| | - Salora 28MC110 100 Hz Champion II | |
| | - Salora 29MC100 100 Hz Gala | |

| Item | Description | Order no. |
|---|---|---|
| 11 | WIRE HOLDER | 84486070 |
| 12 | CHASSIS HOLDER LEFT | 80409535 |
| 13 | CHASSIS HOLDER RIGHT | 80409559 |
| 14 | CONNECTING PIECE 1-3 (ONLY NO. 3 USED) | 84488881 |
| 15 | CONNECTING PLATE 28" | 84488470 |
| | **SPRINGS, SCREWS** | |
| 18 | HEAT SINK SPRING | 79400021 |
| 19 | PT-SCREW 2.9x9.5 (2 AUDIO OUT, 1 AUDIO IN) | 78360002 |

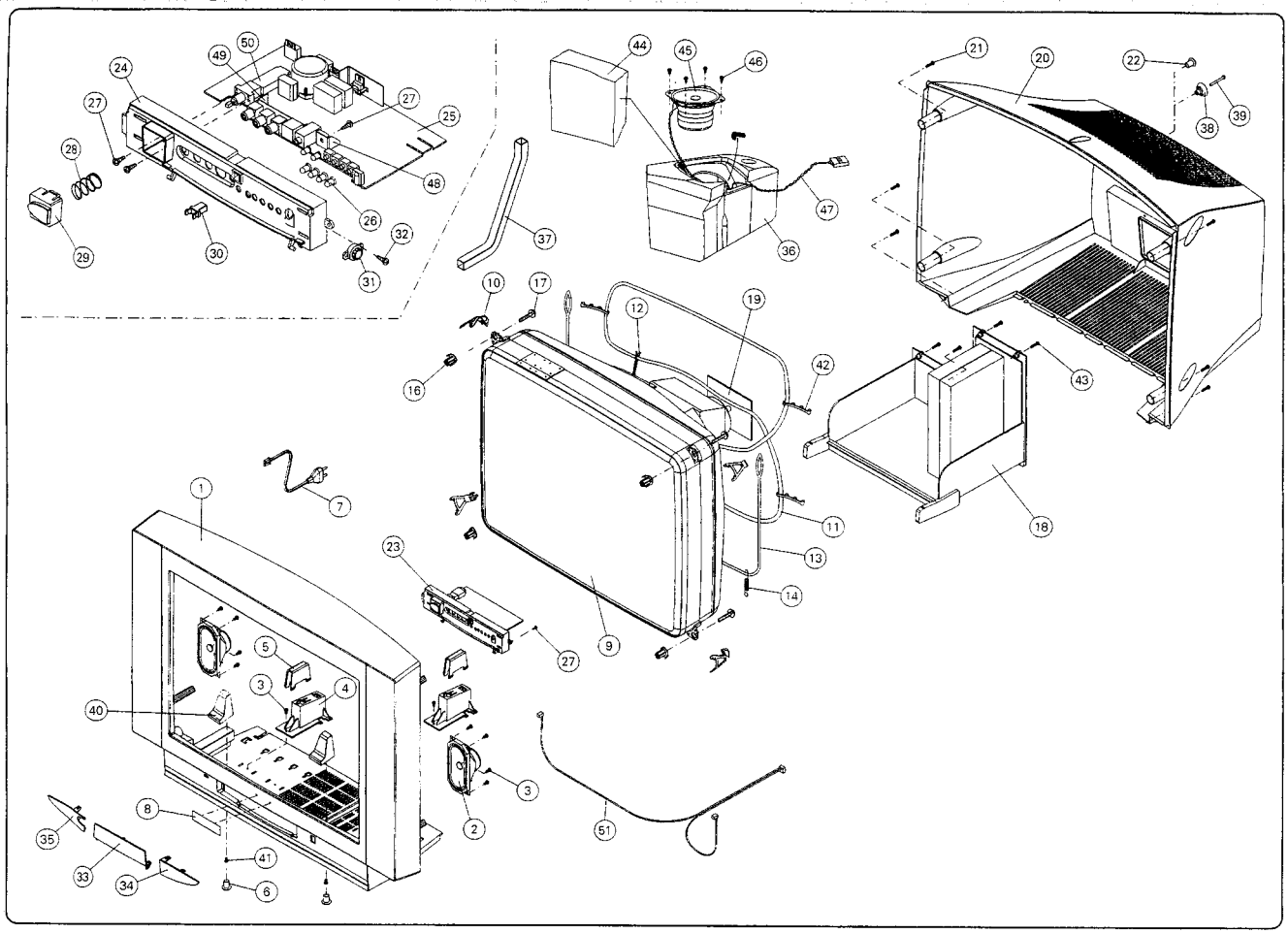
# Mechanical parts 28" B8 / V3




| Item | | Description | Order no. |
|---|---|---|---|
| 1 | ⚠ | CABINET 28 B8 SILVER | 85101130 |
| 1 | ⚠ | CABINET 28 V3 MDB | 85101120 |
| 1 | ⚠ | CABINET 28 V3 SILVER | 85101090 |
| 2 | | CHASSIS BRACKET | 84488920 |
| 3 | | FOOT PAD 14.6mm | 80424027 |
| 4 | | LOUDSPEAKER 57x126mm 8Ω 10W | 43120022 |
| 5 | | PT-SCREW KB40x10 FOR LOUDSPEAKER B8 | WC0368 |
| 5 | | PT-SCREW KB40x10 FOR LOUDSPEAKER V3 | WC0353 |
| 6 | | LOUDSPEAKERS WIRE BUNDLE | 96010145 |
| 7 | | BAGDE FINLUX | 84701620 |
| 7 | | BAGDE LUXOR | UA1249 |
| 7 | | BAGDE SALORA | UA1245 |
| 8 | ⚠ | MAINS CABLE 2.25m | 70003769 |
| 9 | ⚠ | *PICTURE TUBE | |
| | | *(See section "Variable components", page 43)* | |
| 10 | | DEGAUSSING COIL HOLDER | UG0585 |
| 11 | | GROUNDING WIRE | 96010090 |
| 12 | ⚠ | DEGAUSSING COIL | 45820024 |
| 13 | | FELT PAD | 80440385 |
| 14 | | DEGAUSSING COIL HOLDER | 84488790 |
| 15 | | GROUNDING SPRING | 81401082 |
| 16 | | DEGAUSSING COIL TIGHTENER | 80424133 |
| 16 | | WIRE TIE | 54040164 |
| 17 | | PICTURE TUBE HOLDER | 84480810 |
| 18 | | PT-SCREW K7x30 FOR PICTURE TUBE | 62034039 |
| 19 | ⚠ | *CHASSIS | TX***** |
| | | *(See section "Variable components", page 43)* | |
| 20 | ⚠ | CRT MODULE | HH135 |

| Item | | Description | Order no. |
|---|---|---|---|
| 21 | | CONTROL UNIT B8 | SY107 |
| 21 | | CONTROL UNIT V3 | SY106 |
| 22 | | CONTROL UNIT FRAME B8 | 84461120 |
| 22 | | CONTROL UNIT FRAME V3 | 84461150 |
| 23 | | MAINS BUTTON B8 | 80425272 |
| 23 | | MAINS BUTTON V3 | 84680530 |
| 24 | | COMPRESSION SPRING | UC3051 |
| 25 | | FLAP LOCK | 80413473 |
| 26 | | PUSH BUTTON | 63157040 |
| 27 | | PT-SCREW KB30x8 | WC0371 |
| 28 | | CONTROL UNIT MODULE | FC100 |
| 29 | | FIRE BARRIER FOR CONTROL UNIT | 84860450 |
| 30 | | MAINS BUTTON LEVER B8 | 84680680 |
| 31* | | FLAP | |
| | | *(See section "Variable components", page 43)* | |
| 32 | ⚠ | BACK COVER 28 B8 / V3 MDB | 84303690 |
| 33 | | PT-SCREW KB40x20 | WC0354 |
| 34 | | PLUG FOR BACK COVER | 80409631 |
| 35 | | PT-SCREW KB40x10 FOR CHASSIS BRACKET | WC0353 |
| 36 | ⚠ | MAINS SWITCH | 41210004 |
| 37 | ⚠ | COVER FOR CAMERA CONNECTOR | 84488890 |
| 38 | | MODULE SUPPORT | 81408167 |
| 39 | | PLASTIC TUBE 9.5mm | 86500342 |
| | | BADGE SKY DESIGN | 78200289 |
| | | AUDIO LINE OUTPUT MODULE | TA100 |
| | * | SIGNAL MODULE (AV100) | AVACBAA |
| | | *(See section "Variable components", page 43)* | |

# Mechanical parts 29" X3 / X4



| Item | | Description | Order no. |
|---|---|---|---|
| 1 | ⚠ | CABINET 29 X3/4 SILVER | 85101010 |
| 2 | | LOUDSPEAKER 8Ω | 43120005 |
| 3 | | PT-SCREW KB40x8 | WC0368 |
| 4 | | CHASSIS BRACKET | 84488910 |
| 5 | | CHASSIS HOLDER | 84488440 |
| 6 | | FOOT PAD 14.6mm | 80424027 |
| 7 | ⚠ | MAINS CABLE 2.25m | 70003769 |
| 8 | | BADGE SALORA | UA1245 |
| 8 | | BAGDE FINLUX | 84701620 |
| 9 | ⚠ | PICTURE TUBE Sam A68QCP891X100 | 43642914 |
| | ⚠ | PICTURE TUBE Sam A68QCP891X239 | 43642915 |
| 10 | | DEGAUSSING COIL HOLDER | 84488900 |
| 11 | | DEGAUSSING COIL | 45820034 |
| 12 | | DEGAUSSING COIL TIGHTENER | 80424133 |
| 13 | | GROUNDING WIRE | 96010103 |
| 14 | | GROUNDING SPRING | 81401082 |
| 15 | | PLASTIC TUBE | 86500342 |
| 16 | | PICTURE TUBE HOLDER | 84480810 |
| 17 | | PT-SCREW K70x40 FOR PICTURE TUBE | WC2027 |
| 18 | ⚠ * | CHASSIS | |
| | | *(See section "Variable components", page 43)* | |
| 19 | ⚠ * | CRT MODULE | HH131 |
| 20 | ⚠ * | BACK COVER 29 X3/4 MDB | 84303700 |
| 21 | | PT-SCREW KB40x20 FOR BACK COVER | WC0354 |
| 22 | | PLUG FOR BACK COVER *(If no subwoofer)* | 80409631 |
| 23 | | CONTROL UNIT X3 | SY104 |
| 23 | | CONTROL UNIT X4 | SY105 |
| 24 | | CTRL UNIT FRAME | 84461160 |
| 25 | | CONTROL UNIT MODULE | FC100 |
| 26 | | PUSH BUTTON | 63157040 |
| 27 | | PT-SCREW KB30x8 | WC0371 |
| 28 | | COMPRESSION SPRING | UC3051 |

| Item | | Description | Order no. |
|---|---|---|---|
| 29 | | MAINS BUTTON X3 | 84680700 |
| 29 | | MAINS BUTTON X4 | 84680740 |
| 30 | | FLAP LOCK | 80413473 |
| 31 | | FLAP MOTION RETARDER | 84488870 |
| 32 | | PT-SCREW KB25x8 | 78360040 |
| 33* | | FLAP | |
| | | *(See section "Variable components", page 43)* | |
| 34 | | LENS LEFT SIDE X3 | 84553340 |
| 34 | | LENS LEFT SIDE X4 | 84553420 |
| 35 | | LENS RIGHT SIDE X3 | 84553470 |
| 35 | | LENS RIGHT SIDE X4 | 84553460 |
| 36 | | SUBWOOFER BOX | SCE073 |
| 37 | | SUBWOOFER BOX HOLDER | 81408105 |
| 38 | | PLUG FOR SUBWOOFER BOX MOUNTING | UL0104 |
| 39 | | PT-SCREW KB40x40 | WC0429 |
| 40 | | PICTURE TUBE SUPPORT | 84488990 |
| 41 | | SCREW 4x12 FOR PICTURE TUBE SUPPORT | WC0344 |
| 42 | | DEGAUSSING COIL HOLDER | 84488790 |
| 43 | | PT-SCREW KB40x20 | WC0354 |
| 44 | | ABSORBER | UA1668 |
| 45 | | SUBWOOFER LOUDSPEAKER 16Ω | 43120012 |
| 46 | | PT-SCREW KB40x10 | WC0353 |
| 47 | | SUBWOOFER WIRE BUNDLE | 96008820 |
| 48 | | MODULE SUPPORT | 81408167 |
| 49 | ⚠ | COVER FOR CAMERA CONNECTOR | 84488890 |
| 50 | ⚠ | MAINS SWITCH | 41210004 |
| 51 | | LOUDSPEAKERS WIRE BUNDLE | 96010145 |
| | | BADGE SKY DESIGN | 78200289 |
| | | AUDIO LINE OUTPUT MODULE | TA100 |
| | * | SIGNAL MODULE (AV100) | AV***** |
| | | *(See section "Variable components", page 43)* | |
| | | TWIN TUNER PIP MODULE | PP100 |

# Rack R900 Silver (4215) 28" V3 / Rack R910 Silver (4063) 28" / B6

| Item | Order no. |
|---|---|
| ASSEMBLY KIT | T9000 |
| CASTOR | P9867 |
| GLASS DOOR | L9002867 |

A X 1
052090

B X 24
120410

C X 4
051001

D X 4
Kp2550400

E X 4
031090

F X 2 black
1342913

G X 1
030008

H X 10
054274

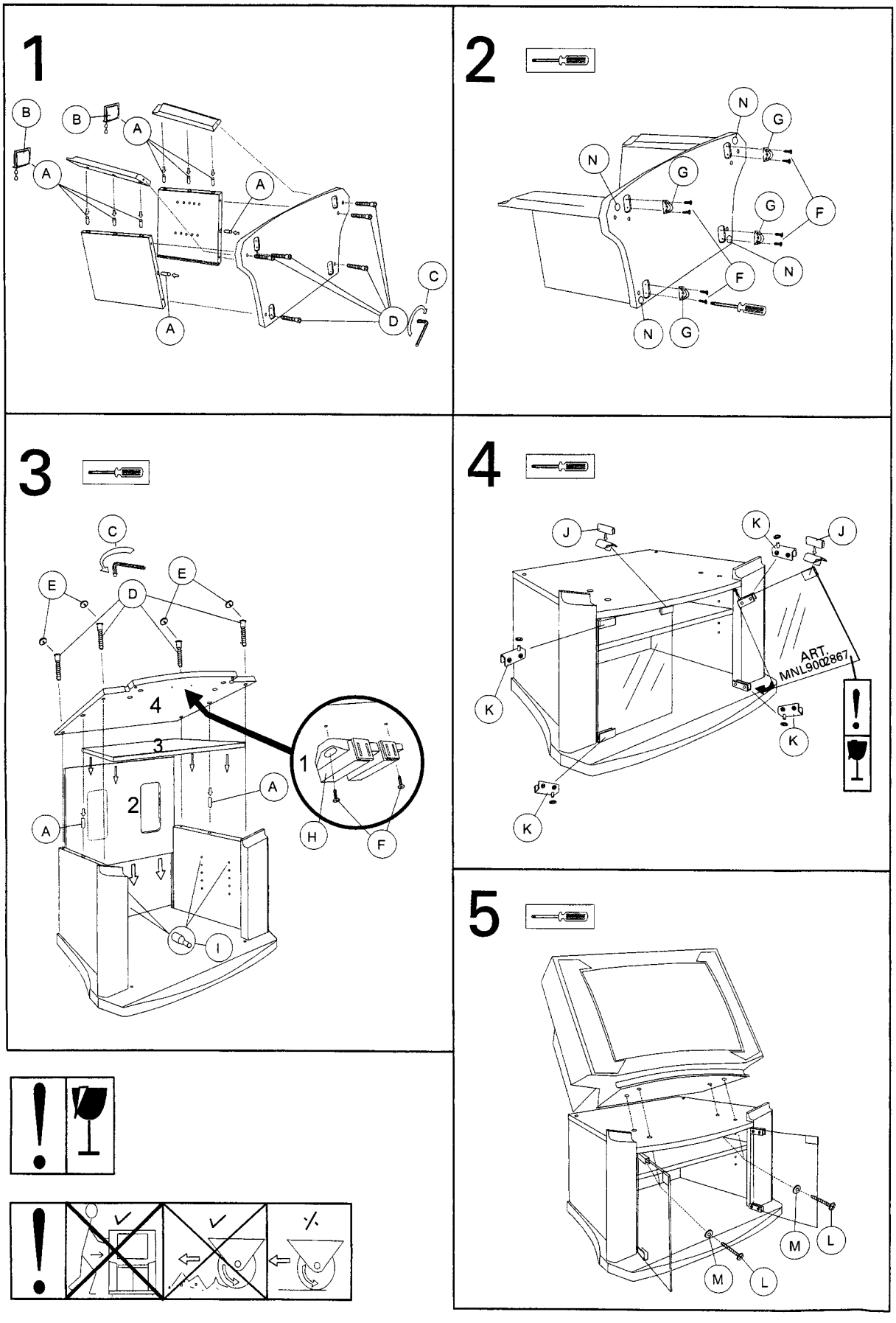
I X 4
VK520589.1

J X 2
019991

K X 2
KB5X30

L X 4
030035

M X 2
031116



# Rack R798 Digi Black (1714) 28" B8 / V3

| Item | Order no. |
|---|---|
| ASSEMBLY KIT | T7000 |
| CASTOR | P9867 |
| GLASS DOOR | L7982867 |

A 052090

1pc.

B 120410

24pcs.

C 051001

4pcs.

D Kp2550400

4pcs.

E 031090

4pcs.

F 1342913

2pcs. BLACK

G 030007

1pc.

H 054274

10pcs.

I VK520589.1

2pcs.

J 019991

1pc.

K 00800

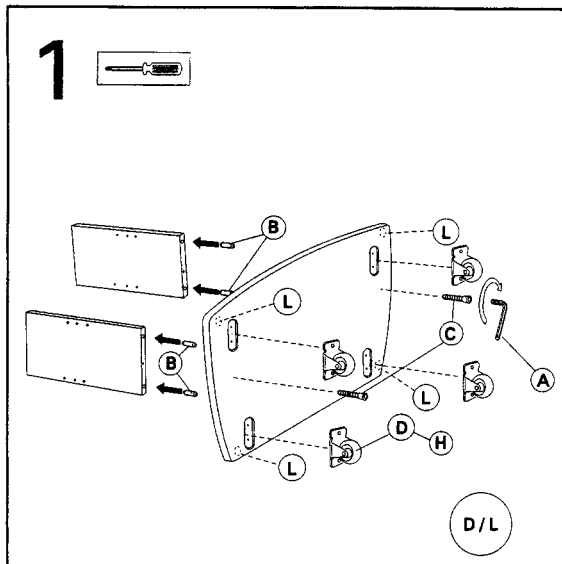
2pcs.

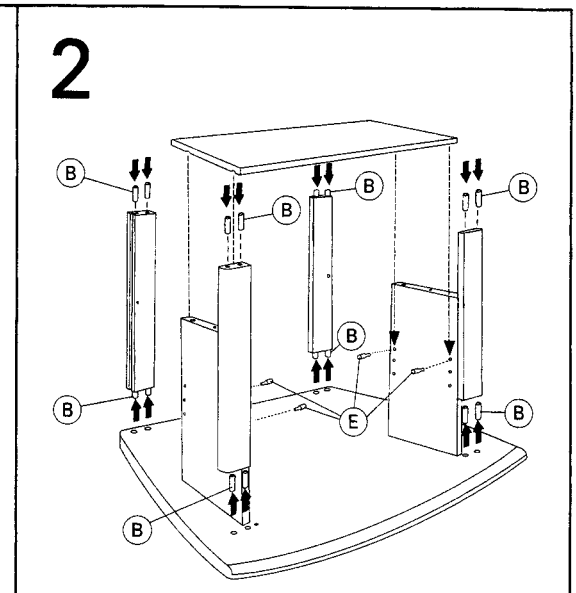
L 030035

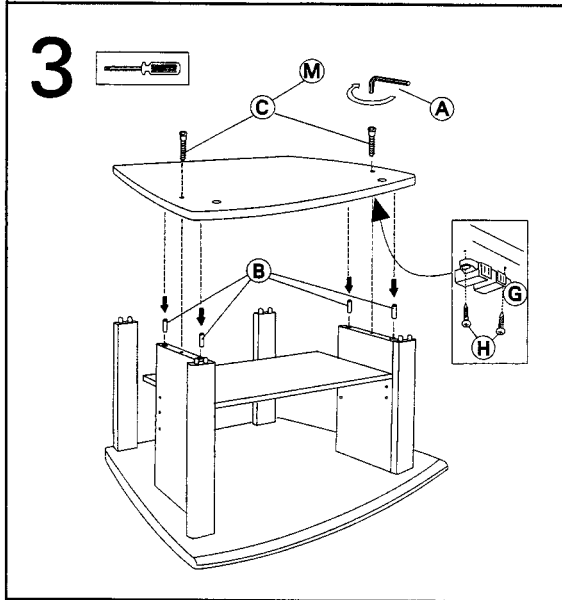
4pcs.

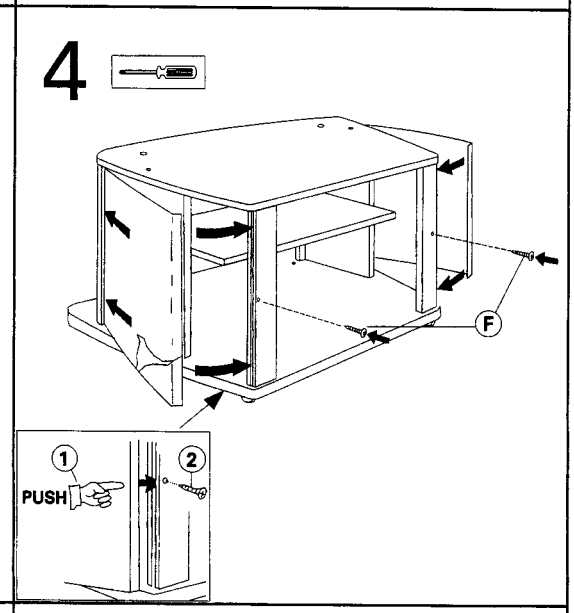
M 031116

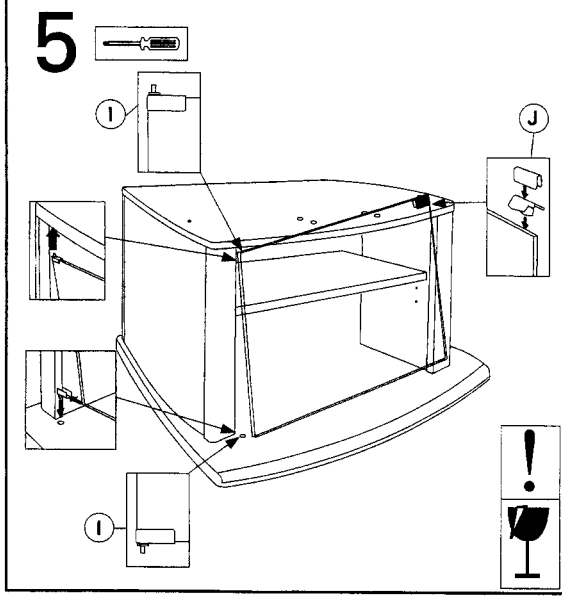
2pcs.

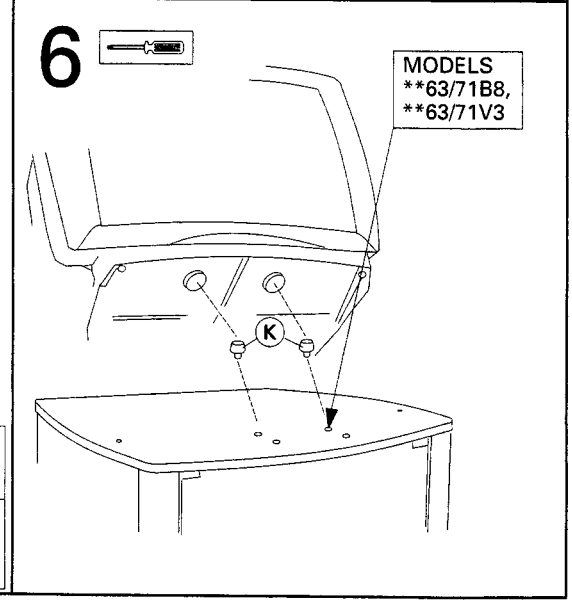


## Notes

## Notes

441 024
Printed matter
HANSAPRINT/272244/2002

# MULTI CONCEPT 2A
# TX CHASSIS
# (100 Hz, 4:3)

TV

2002

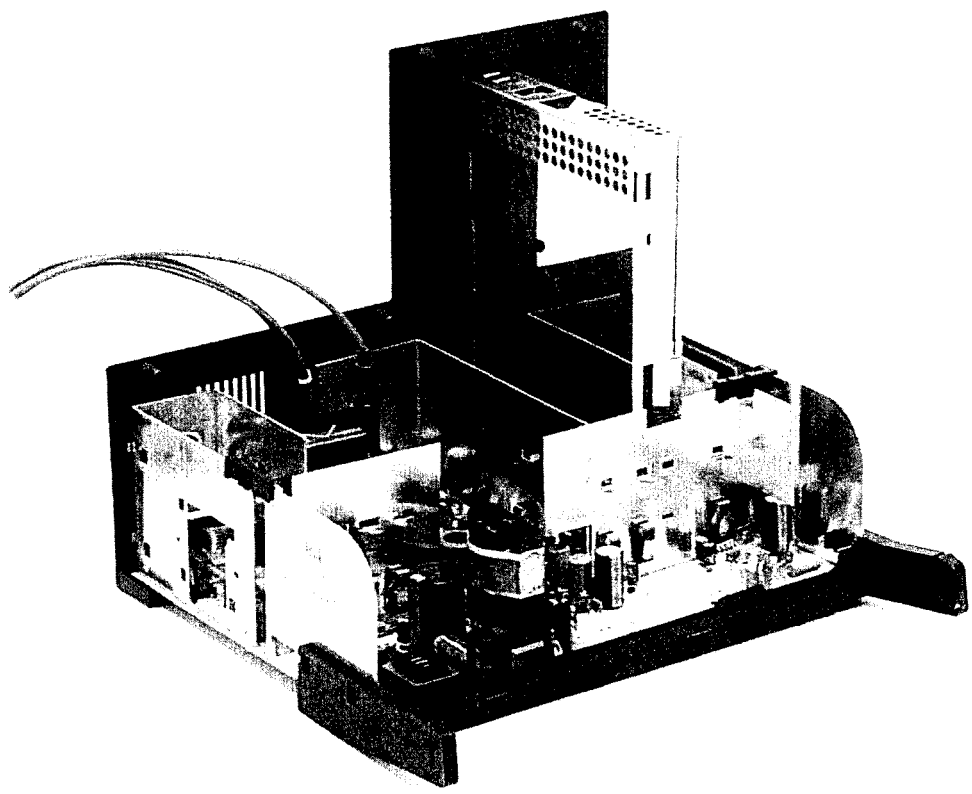
(GB) **Supplement to service manual 66119682**

(D) **Ergänzung zum Service-Manual 66119682**

**FINLUX**

**71V100 MC 100 Hz BiB (429.514-3)**

| Marketing code | Production code | Chassis | SW version | Design | AV module | Picture tube type | / Order no. |
|---|---|---|---|---|---|---|---|
| 71V100 MC 100 Hz BiB | TX71V3RFHHB | TXBREAA | TZAE16.0 | 28" V3 | AVECBCA | 28" Phi 4:3 A66EAK071X44 | 43642831 |



# GB Spare parts — D Ersatzteile

**Note!** **Hinweis!**

⚠ Safety components in accordance with existing safety regulations. These components must be replaced only with original parts.
⚠ Sicherheitsbauteil im Sinn der Sicherheitsbestimmung. Diese Teile dürfen nur durch Originalteile ersetzt werden.

## TXBREAA Main board

| Item | | Description | Order no. |
|---|---|---|---|
| **RESISTORS** | | | |
| PK | 1⚠ | R POT FOCUS 59M 2W0 | 31280010 |
| PO | 1 | R TRIM HOR 2K2 0W1 | 31110970 |
| RA | 13, 14, 19 | R SMD 10K 0W10 | 31425833 |
| RA | 18 | R METOX BK 1R0 4W0 | 31430013 |
| RA | 22 | R SMD 1K0 0W10 | 31425820 |
| RA | 24, 25 | R SMD 10R 0W10 | 31425810 |
| RA | 27, 28 | R SMD 2K2 0W10 | 31425828 |
| RA | 30, 31 | R SMD 4K7 0W10 | 31425824 |
| RK | 0 | R CARF AX 1M0 5% 0W25 | 31660028 |
| RK | 1, 44 | R SMD 100R 0W10 | 31425852 |
| RK | 3, 5, 10, 12, 56, 57 | R SMD 2K7 0W10 | 31425821 |
| RK | 4, 52, 53, 59, 61 | R SMD 100K 0W10 | 31425844 |
| RK | 6 | R SMD 2K20 0W10 | 31490098 |
| RK | 7, 11, 84, 133 | R SMD 10K 0W10 | 31425833 |
| RK | 8 | R CARF RAD 15K 5% 0W25 | 31630033 |
| RK | 9 | R SMD 430R 0W10 | 31425879 |
| RK | 13 | R SMD 3K3 0W10 | 31425829 |
| RK | 14 | R CARF AX 220K 5% 0W25 | 31660033 |
| RK | 15 | R SMD 5K1 0W10 | 31490453 |
| RK | 16 | R SMD 15K 0W10 | 31425835 |
| RK | 18 | R SMD 150R 0W10 | 31425812 |
| RK | 20 | R SMD 10R 0W10 | 31425810 |
| RK | 22⚠ | R FUS V RAD 2R2 5% 0W25 | 31860003 |
| RK | 23, 25 | JUMPER R=15,0 mm | 85700150 |
| RK | 23-1⚠, 23-2⚠, 25-1⚠, 25-2⚠, 66-1⚠, 66-2⚠, 103-1⚠, 103-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| RK | 30⚠ | HK-RESISTOR 120R 5%LCR0207 | 13100232 |
| RK | 31, 33, 38, 39, 42 | R SMD 2K00 0W10 | 31490003 |
| RK | 32, 49 | R SMD 1K0 0W10 | 31425820 |
| RK | 46, 47 | R SMD 820R 0W10 | 31425819 |
| RK | 48 | R SMD 470R 0W10 | 31425817 |
| RK | 50 | R METOX BK 0R47 1W5 | 31430011 |
| RK | 51, 82, 100 | R SMD 2K2 0W10 | 31425828 |
| RK | 54 | R SMD 4K7 0W10 | 31425824 |
| RK | 55⚠ | R CARF RAD 0R22 5% 0W25 | 31514506 |
| RK | 58 | R METOX BK 0R33 1W5 | 31430010 |
| RK | 62 | R CARF AX 27R 5% 0W25 | 31660007 |
| RK | 63⚠, 68⚠ | R FUS V RAD 0R1 0W40 | 31850059 |
| RK | 64⚠ | R FUS V RAD 27R 5% 0W25 | 31860001 |
| RK | 65, 67 | R CARF RAD 6K8 5% 0W25 | 31630029 |
| RK | 66⚠ | R FUS V AX 0R47 5% 0W5 | 31850004 |
| RK | 69 | R SMD 1M0 0W10 | 31425801 |
| RK | 70, 77 | R CARF RAD 100K 5% 0W25 | 31630037 |
| RK | 72⚠, 73⚠ | R FUS V AX 3R0 0W50 | 31850007 |
| RK | 75⚠ | R CARF AX 1R5 5% 0W5 | 31630014 |
| RK | 76⚠ | R FUS V AX 2R2 0W50 | 31850056 |
| RK | 81 | R CARF AX 39K 0W25 | 31660054 |
| RK | 83⚠ | R FUS V BLK 390R 10% 1W0 | 31850002 |
| RK | 99 | R SMD 8K2 0W10 | 31425832 |
| RK | 101 | R SMD 39K 0W10 | 31425841 |
| RK | 102 | R SMD 82K 0W10 | 31425843 |
| RO | 1⚠ | R PTC BLK Rs=9ohm Dual FOR DEGAUSSING | 31930011 |
| RO | 2, 3, 60 | R SMD 220K 0W10 | 31490457 |
| RO | 4 | R SMD 270K 0W10 | 31490458 |
| RO | 5 | R SMD 2K7 0W10 | 31425821 |
| RO | 6, 16 | R SMD 24K3 0W10 | 31490451 |
| RO | 8 | R SMD 6K8 0W10 | 31425831 |
| RO | 9 | R SMD 18K 0W10 | 31425813 |
| RO | 10, 11, 12, 14 | R SMD 1M0 0W10 | 31425801 |
| RO | 13 | R METOX AX 2K7 2W | 31414050 |
| RO | 15, 17 | R SMD 12R 0W10 | 31490058 |
| RO | 18, 35 | R SMD 2K2 0W10 | 31425828 |
| RO | 24 | R SMD 1K0 0W10 | 31425820 |
| RO | 25 | R SMD 150R 0W10 | 31425812 |
| RO | 26 | R METF AX 0R68 0W60 | 31440061 |
| RO | 28 | R CARF BLK 560R 0W50 AX | 31650003 |
| RO | 30 | R SMD 1K8 0W10 | 31425827 |
| RO | 32⚠ | R METF AX 10M 0W50 HV | 31460001 |
| RO | 33 | R SMD 820R 0W10 | 31425819 |
| RO | 38, 39, 40, 41 | R SMD 82R 0W10 | 31425882 |
| RO | 43 | R SMD 33K 0W10 | 31425840 |
| RO | 49 | R SMD 150K 0W10 | 31425846 |
| RO | 51 | R SMD 180K 0W10 | 31490012 |
| RO | 53 | R SMD 10K 0W10 | 31425833 |
| RO | 54 | R SMD 5K1 0W10 | 31490453 |
| RO | 58 | R SMD 100K 0W10 | 31425844 |
| RO | 59 | R WRLAC AX 0R18 2W5 | 31360046 |
| RO | 59-1⚠, 59-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| RO | 61 | R SMD 470R 0W10 | 31425817 |
| RO | 62 | R CARF AX 2K2 0W25 | 31548618 |
| RO | 67 | JUMPER R= 5,0 mm | 85700050 |
| RQ | 1 | R SMD 22K 0W10 | 31425837 |
| RQ | 3, 4, 5, 6, 7 | R SMD 4K7 0W10 | 31425824 |
| RQ | 12 | R SMD 330R 0W10 | 31425857 |
| RQ | 14 | R SMD 470R 0W10 | 31425817 |
| RQ | 16 | R SMD 1K0 0W10 | 31425820 |
| RS | 1 | R SMD 2K2 0W10 | 31425828 |
| RS | 2 | R SMD 1K5 0W10 | 31425826 |
| RS | 3 | R METF RAD 1R54 1% 0W6 | 31450012 |
| RS | 4 | R SMD 270K 0W10 | 31425805 |
| RS | 5, 8 | R METF RAD 1R21 1% 0W6 | 31450008 |
| RS | 9 | R CARF RAD 27R 5% 0W25 | 31630021 |
| RS | 10, 11 | R SMD 12R 0W10 | 31490058 |
| RS | 13, 14, 15 | R CARF RAD 820R 5% 0W25 | 31630044 |
| RS | 21 | R SMD 10K 0W10 | 31425833 |
| RS | 22 | R SMD 47K 0W10 | 31425836 |
| RS | 23 | R SMD 12K1 0W10 | 31490051 |
| RS | 24, 27 | R SMD 5K11 0W10 | 31490454 |
| RS | 25, 26 | R SMD 6K8 0W10 | 31425831 |
| J | 33, 301, 319 | R SMD 0R 0W10 | 31425802 |
| JQ | 10 | R SMD 0R 0W10 | 31425802 |
| **CAPACITORS** | | | |
| CA | 1, 2 | C (M)KT RAD 220N 63V | 33127108 |
| CA | 8, 9 | C CER1 SMD 390P 50V | 32145428 |
| CA | 13 | C CER2 SMD 100N 25V | 32190001 |
| CA | 17 | C ECAP RAD 22U 35V | 34540021 |
| CA | 18, 20 | C ECAP BLK 3300U 35V | 34510009 |
| CA | 19 | C CER2 SMD 100N 50V | 32536223 |
| CA | 21, 22 | C CER2 SMD 22N 50V | 32536221 |
| CA | 24, 25 | C ECAP BLK 470U 35V | 34220648 |
| CK | 1 | C CER1 SMD 220P 50V | 32125513 |
| CK | 2, 41 | C CER2 SMD 10N 50V | 32536213 |
| CK | 3, 6 | C ECAP RAD 220U 25V | 34229784 |
| CK | 4 | C (M)KT RAD 1U5 63V | 33120948 |
| CK | 5 | C (M)KT RAD 100N 63V | 33127106 |
| CK | 9 | C CER1 SMD 56P 50V | 32125526 |
| CK | 10, 28 | C (M)KT RAD 220N 63V | 33127108 |
| CK | 12 | C ECAP RAD 100U 16V | 34223252 |
| CK | 13 | C CER1 SMD 330P 50V | 32125517 |
| CK | 14 | C ECAP RAD 47U 63V | 34540053 |
| CK | 15 | C ECAP BLK 2200U 25V | 34510005 |
| CK | 16 | C (M)KT RAD 22N 400V | 33150965 |
| CK | 17⚠, 23⚠ | C (M)KC BLK 330N 250V | 33660001 |

| Item | | Description | Order no. |
|---|---|---|---|
| CK | 17-1⚠, 17-2⚠, 18-1⚠, 18-2⚠, 23-1⚠, 23-2⚠, 24-1⚠, 24-2⚠, 32-1⚠, 32-2⚠, 33-1⚠, 33-2⚠, 36-1⚠, 36-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| CK | 18 | C (M)KP BLK 820P 1K5V | 33450039 |
| CK | 19⚠ | C ECAP BLK 4U7 250V HV | 34610001 |
| CK | 20 | C (M)KT BLK 100N 250V | 33360003 |
| CK | 21 | C CER2/3 RAD 2N2 20% 500V | 32780003 |
| CK | 22 | C CER2/3 RAD 330P 10% 500V | 32780002 |
| CK | 24 | C (M)KP BLK 470P H 1K6V | 33460011 |
| CK | 25 | C (M)KP BLK 15N H 100V | 33460003 |
| CK | 26⚠ | C (M)KP BLK 10N 1K6V | 33450037 |
| CK | 26-1⚠, 26-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| CK | 27⚠ | C (M)KP BLK 30N 3,5% 630V | 33450064 |
| CK | 27-1⚠, 27-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| CK | 29⚠ | C (M)KP BLK 560N 250V | 33460021 |
| CK | 29-1⚠, 29-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| CK | 30, 44 | C (M)KT RAD 470N 63V | 33127123 |
| CK | 30-1⚠, 30-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| CK | 31-1⚠, 31-2⚠, 34-1⚠, 34-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| CK | 32⚠, 33⚠ | C (M)KP BLK 56N 400V | 33450061 |
| CK | 34⚠ | PROPKO 300n 5% 250V | 22171302 |
| CK | 42 | C CER2 SMD 100N 25V | 32190001 |
| CO | 1⚠, 4⚠ | C CER2/3 BLK 1N0 20% 400VAC Y | 32610922 |
| CO | 2⚠ | C (M)KT BLK 220N 400V | 33360002 |
| CO | 3⚠, 7⚠ | C MP/P BLK 470N 275VAC X2 | 33260006 |
| CO | 3-1⚠, 3-2⚠, 7-1⚠, 7-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| CO | 5 | C CER1 SMD 1N0 50V | 32180035 |
| CO | 6 | C CER1 SMD 56P 50V | 32125526 |
| CO | 8 | C (M)KP RAD 1N0 H 100V | 33622914 |
| CO | 9 | C CER2 SMD 3N3 50V | 32536207 |
| CO | 10, 14, 48 | C CER1 SMD 1N0 50V | 32125545 |
| CO | 11 | C CER2 RAD 220P 500V | 32790062 |
| CO | 12, 50, 51, 52, 53, 55, 56, 60, 63, 65 | C CER2 SMD 100N 25V | 32190001 |
| CO | 13 | C ECAP RAD 47U 63V | 34540053 |
| CO | 15 | C (M)KP BLK 4N7 H 1K6V | 33450019 |
| CO | 15-1⚠, 15-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| CO | 19 | C ECAP BLK 220U 450V HV | 34540102 |
| CO | 20 | C (M)KT RAD 1U0 63V | 33124758 |
| CO | 21 | C (M)KP BLK 220P 1K6V | 33460009 |
| CO | 22 | C (M)KT BLK 10N 630V | 33380023 |
| CO | 23⚠ | C CER2/3 BLK 1N5 20% 400VAC Y | 32960002 |
| CO | 24⚠ | C CER2/3 RAD 330P 10% 500V Y | 32780002 |
| CO | 25⚠, 26⚠, 27⚠ | C CER2/3 RAD 1N0 10% 500V Y | 32780004 |
| CO | 29, 54 | C (M)KT BLK 100N 250V | 33360003 |
| CO | 31 | C ECAP BLK 2200U 35V | 34226678 |
| CO | 32 | C ECAP BLK 1000U 35V | 34510010 |
| CO | 33, 34, 39, 40, 41, 42 | C (M)KT RAD 100N 63V | 33127106 |
| CO | 36⚠ | C ECAP BLK 220U 250V HV | 34610007 |
| CO | 43, 44 | C ECAP BLK 1000U 16V | 34510004 |
| CO | 45 | C ECAP RAD 10U 63V | 34540025 |
| CO | 49 | C CER2 SMD 10N 50V | 32536213 |
| CO | 58, 59, 62, 64 | C ECAP RAD 100U 16V | 34223252 |
| CQ | 1 | C CER1 SMD 56P 50V | 32125526 |
| CQ | 2 | C CER1 SMD 1N0 50V | 32125545 |
| CQ | 4 | C ECAP RAD 10U 63V | 34540025 |
| CQ | 5, 6, 8, 9 | C CER2 SMD 100N 25V | 32190001 |
| CQ | 10 | C ECAP RAD 100U 16V | 34223252 |
| CR | 1 | C (M)KT RAD 100N 63V | 33127106 |
| CS | 3 | C (M)KT BLK 47N 100V | 33380019 |
| CS | 4 | C (M)KP RAD 10N 250V | 33450057 |
| CS | 5 | C (M)KT RAD 470N 63V | 33127123 |
| CS | 6 | C CER2 SMD 100N 25V | 32190001 |
| CS | 7 | C ECAP RAD 47U 63V | 34540053 |
| CS | 8, 10, 11, 12 | C CER2 SMD 10N 50V | 32536213 |

**TRANSISTORS**

| | | | |
|---|---|---|---|
| TA | 5 | TR NPN SMD BC847B 45V | 36145312 |
| TK | 1, 2, 4, 9 | TR PNP SMD BC857B 45V | 36145412 |
| TK | 3 | TR NPN PWR BLK 2SD2012 60V 3A | 36270004 |
| TK | 3, 12 | HEATSINK SPRING | 79400021 |
| TK | 6, 19, 25 | TR NPN SMD BC847B 45V | 36145312 |
| TK | 8 | TR NPN RAD BC637 60V 1A | 36220003 |
| TK | 10 | N-FET PWR BLK BUK457-400B 400V 11A | 36370003 |
| TK | 11 | TR NPN RAD BF422 250V | 36125217 |
| TK | 12 | TR NPN PWR BLK BU2525AF 1K5V 12A | 36270003 |
| TO | 1-2⚠, 1-3⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| TO | 1 | N-FET BLK STP7NC70Z 700V 6,8A | 36370018 |
| TO | 1 | INSULATOR FOIL 247 1k5V | 49000088 |
| TO | 1 | HEATSINK SPRING | 79400021 |
| TQ | 1 | TR NPN SMD BC847B 45V | 36145312 |
| TS | 5, 6, 7, 8, 9, 10 | TR PNP SMD BC857B 45V | 36145412 |

**DIODES**

| | | | |
|---|---|---|---|
| DK | 1, 2, 3, 5, 6 | DIODE SMD BAS16 75V | 36560318 |
| DK | 9, 12 | DI RECT PWR AX BYV36C 600V 1,6A | 36575452 |
| DK | 11, 14 | DI RECT PWR AX 1N4937 600V 1,0A | 36575353 |
| DK | 13 | DI AX RECT BYT56J 600V 1,5A | 36240001 |
| DK | 15 | DI RECT PWR AX BYV26C 600V 1,0A | 36610005 |
| DK | 16 | DI BK RECT BYM357X DAMPER+MODULATOR | 36621564 |
| DK | 16 | HEATSINK SPRING | 79400021 |
| DK | 16-1⚠, 16-2⚠, 16-3⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| DO | 1, 2, 6, 16 | DI AX RECT BYM36E 1K0V 2,9A | 36621562 |
| DO | 2, 16 | DIODE COOLING PLATE | 81402597 |
| DO | 3, 4 | DI RECT PWR AX BY527 1K25V | 36610001 |
| DO | 3-2⚠, 4-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| DO | 4-1⚠, 6-1⚠, 6-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| DO | 7-1⚠, 7-2⚠, 12-1⚠, 12-2⚠, 13-1⚠, 13-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| DO | 9, 21 | DIODE SMD BAS16 75V | 36560318 |
| DO | 12 | DI BK RECT FMC-G28SL 800V 5,0A | 36621567 |
| DO | 12, 13 | HEATSINK SPRING | 79400021 |
| DO | 13 | DI BK RECT STTA506F 600V 5,0A | 36621563 |
| DO | 14 | DI SMD BAS20 150V 200mA | 36560320 |

| Item | | Description | Order no. |
|---|---|---|---|
| DO | 16-1⚠, 16-2⚠, 22-1⚠, 22-2⚠, 26-1⚠, 26-2⚠, 1-1⚠, 1-2⚠, 2-1⚠, 2-2⚠, 3-1⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| DO | 17, 18 | DI RECT AX BYW98 200V 3A | 36575470 |
| DO | 17, 18 | DIODE COOLING PLATE -2 | 81402596 |
| DO | 19 | IC VREF TL431CLP | 37410012 |
| DO | 22, 26 | DI AX SCHT SB560 60V 5,0A | 36420005 |
| DS | 1 | DIODE SMD BAS16 75V | 36560318 |
| **ZENERS** | | | |
| ZDK | 2 | Z DIODE SMD BZX84B 24V 2% | 36780022 |
| ZDK | 3, 10 | Z DIODE SMD BZX84B 12V 2% | 36780008 |
| ZDK | 4 | Z DIODE SMD BZX84C 51V 5% | 36770035 |
| ZDK | 5 | Z DIODE SMD BZX84C 2V4 5% | 36780005 |
| ZDO | 1, 11 | Z DIODE SMD BZX84B 12V 2% | 36780008 |
| ZDQ | 1 | Z DIODE SMD BZX84B 30V 2% | 36770033 |
| **INTEGRATED CIRCUITS** | | | |
| ICA | 2 | IC AUDIO TDA2616 12+12W | 37631259 |
| ICA | 2 | HEATSINK SPRING | 79400021 |
| ICO | 1 | IC PWR CONT TDA16846 | 37450019 |
| ICO | 3⚠ | IC OPTO COUPL SFH615A-2 | 36950009 |
| ICO | 5, 6 | IC V-REG PQ05RH11 5V 1,5A FULLMOLD | 37460008 |
| ICO | 5, 6, 8, 11 | HEATSINK SPRING | 79400021 |
| ICO | 8 | IC V-REG PQ3RD13 3V3 1,0A FULLMOLD | 37460033 |
| ICO | 11 | IC V-REG L7812CV 12V 1,5A | 37681748 |
| ICS | 1 | IC DEFL TDA8354Q/N1I/N1E | 37450017 |
| ICS | 1 | HEATSINK SPRING | 79400021 |
| **FUSES** | | | |
| FO | 1⚠ | FUSE F2,5A MINIATURE D=8,5 | 43770004 |
| FO | 1-1⚠, 1-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| FO | 2⚠, 4⚠, 7⚠, 8⚠ | FUSE T2,0A MINIATURE D=8,5 | 43770005 |
| **TRANSFORMERS** | | | |
| TRK | 1 | TRAFO 545 01 204 00 | 45380013 |
| TRK | 2⚠ | DST TRAFO 1372,9018 | 45360083 |
| TRK | 2-1⚠, 2-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| TRK | 2-5⚠, 2-7⚠, 2-9⚠, 2-10⚠, 2-13⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| TRK | 2-16⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| TRK | 3-1⚠, 3-3⚠, 3-4⚠, 3-6⚠, 4-2⚠, 4-5⚠, 4-9⚠, 5-1⚠, 5-3⚠, 5-4⚠, 5-6⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| TRK | 5⚠ | COIL BLK RAD 68uH 15% E/W | 45380024 |
| TRO | 2⚠ | MAINS TRAFO 2322,0030 | 45320069 |
| TRO | 2-8b⚠, 2-10⚠, 2-10b⚠, 2-19⚠, 2-20b⚠, 2-21⚠, 2-22⚠, 2-22b⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |

| Item | | Description | Order no. |
|---|---|---|---|
| **COILS** | | | |
| L | 1, 2, 3 | EMI SUPPRES BEAD 3,5x9 | 45620007 |
| LK | 1 | COIL LIN BLK EKM12-136 | 45161283 |
| LK | 1-1⚠, 1-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| LK | 1-3⚠, 1-4⚠, 2-1⚠, 2-2⚠, 5-1⚠, 5-2⚠, 6-1⚠, 6-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| LK | 2 | COIL BLK 280uH FJ1311 | 45610004 |
| LK | 3 | COIL BLK 1,9mH 14R DRM0630192010K-01 | 45610018 |
| LK | 4 | EMI SUPPRES BEAD 3,5x9 | 45620007 |
| LK | 5, 6 | COIL BLK 47uH 7% 1,7A RAD | 45620035 |
| LO | 1⚠ | COIL MAINS BLK TRE293/30H | 45390023 |
| LO | 1-1⚠, 1-2⚠, 1-3⚠, 1-4⚠, 8-4⚠, 9-1⚠, 9-2⚠, 9-3⚠, 9-4⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| LO | 3 | EMI SUPPRES BEAD 3,5x9 | 45620007 |
| LO | 5, 6, 7 | COIL BLK 10uH 1200mA RAD | 45571699 |
| LO | 8 | COIL BLK 1,5mH 1,7A 250V | 45390020 |
| LO | 10 | COIL AX 10uH 1200mA | 45571698 |
| LQ | 1 | COIL BLK 10uH 1200mA RAD | 45571699 |
| LQ | 3, 4 | COIL AX 10uH 1200mA | 45571698 |
| **OTHERS** | | | |
| A | 6, 7, 8, 9 | KONTAKTFEDER | 84880130 |
| HCK | 17_1-1⚠, 23_1-1⚠, 29-1⚠, 34-1⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| HXKT | 1-1⚠, 2-1⚠, 3-1⚠, 4-1⚠, 7-1⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| HXKT | 8⚠, 9⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| J | 4, 6, 15, 45, 54, 61, 89, 121, 131, 137, 138, 151, 173, 193, 198, 203, 211, 219, 220, 222 | JUMPER R=15,0 mm | 85700150 |
| J | 8, 55, 73, 81, 92, 113, 114, 123, 139, 140, 166, 169, 188, 191, 213, 216 | JUMPER R=17,5 mm | 85700175 |
| J | 12, 19, 21, 22, 23, 25, 39, 40, 41, 42, 43, 44, 50, 57, 60, 71, 76, 83, 84, 96, 158, 161, 167, 180, 185, 187, 195, 204, 207, 218, 221, 306, 311, 312, 313, 315 | JUMPER R=12,5 mm | 85700125 |
| J | 49, 51, 53, 67, 68, 74, 75, 77, 98, 124, 134, 148, 164, 178, 181, 186, 199, 201, 217, 304 | JUMPER R=20,0 mm | 85700200 |

| Item | | Description | Order no. |
|---|---|---|---|
| J | 93, 100, 103, 108, 142, 145, 146, 147, 162, 163, 179, 194, 200, 202, 206, 208, 210, 212, 215, 302, 303, 305 | JUMPER R=10,0 mm TL0,6 | 85700100 |
| J | 194-1⚠, 194-2⚠, 195-1⚠, 195-2⚠, 198-1⚠, 198-2⚠, 200-1⚠, 200-2⚠, 202-1⚠, 202-2⚠, 315-1⚠, 315-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| J | 168, 307 | JUMPER R= 7,5 mm | 85700075 |
| J | 300 | JUMPER R=15,0 mm | 85700150 |
| L | 1-1⚠, 1-2⚠, 2-1⚠, 2-2⚠, 3-1⚠, 3-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| TU | 1 | TUNER 4046 FM5 IEC | 58231061 |
| XA | 2 | ROW CONN 4-PIN VERT LOCK | 73190604 |
| XAV | 1 | CONN ROW 9-PIN VERT LOCK | 41710068 |
| XAV | 2, 3 | CONN ROW 19-PIN VERT LOCK | 41710073 |
| XK | 3 | ROW CONN 5-PIN VERT LOCK | 41710001 |
| XK | 3-1⚠, 3-2⚠, 3-3⚠, 3-4⚠, 3-5⚠, 7-1⚠, 7-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| XK | 6 | CONN HEADER 6-PIN PITCH | 41710002 |
| XKT | 1 | BLADE CONN 2,8MM FOR PCB MALE | 41930001 |
| XO | 1 | ROW CONN 2-PIN VERT LOCK | 73184750 |
| XO | 1-1⚠, 1-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| XO | 2 | STIFTW.KA. 5,08 SW | 73190702 |
| XS | 1 | ROW CONN 3-PIN VERT LOCK | 73190603 |
| XT | 1, 2 | CONN ROW 7-PIN VERT LOCK | 41710077 |
| | | INS SLEEVE FOR CONN BLADE 2,8mm | 47310004 |
| | | ANTENNA CABLE ASSY 200mm RCA/IEC PLUG WITH FERRITE | 47780009 |
| | | HOLDER CLIP FOCUS 3mm | 54041366 |
| | | HOLDER CLIP ANODE 4mm | 54041417 |
| | | CHASSIS HOLDER LEFT | 80409535 |
| | | CHASSIS HOLDER RIGHT | 80409559 |
| | | WIRE HOLDER | 84486070 |
| | | CONNECTING PLATE COOLING PLATE | 84488470 |
| | | CONNECTING PIECE | 84488881 |
| | | JUMPER R= 5,0 mm | 85700050 |
| | ⚠ | ANODE CABLE DST 570mm+CHIMNEY | 96008868 |
| | ⚠ | FOCUS CABLE 1,2 410MM | 96010142 |
| | ⚠ | SCREEN CABLE 460mm | 96010244 |
| | ⚠ | ELDOR-DST CABLE 280MM | 96011091 |

## AVECBCA Signal module

**RESISTORS**

| | | | |
|---|---|---|---|
| RAV | 0 | R CARF AX 56R 0W25 | 31660046 |
| RAV | 1, 2, 3, 6, 9, 11, 12, 13, 16, 17, 29, 31, 202, 203, 204, 206, 207, 208, 209, 211, 212, 213, 214, 303, 311, 318 | R SMD 75R 0W10 | 31425861 |
| RAV | 4, 14, 32 | R SMD 15K 0W10 | 31425835 |
| RAV | 7, 18, 21, 44, 63, 99, 108, 114, 117, 119, 122, 126, 128, 132, 134, 138, 141, 223, 226, 246, 224, 337 | R SMD 470R 0W10 | 31425817 |
| RAV | 8, 51, 61, 69, 93, 94, 158, 247, 249, 251, 252, 256, 257, 258, 279 | R SMD 1K0 0W10 | 31425820 |
| RAV | 19, 22, 269, 342 | R SMD 330R 0W10 | 31425857 |
| RAV | 23, 24, 26, 34, 42, 43, 82, 101, 102, 109, 111, 280, 306, 313, 321, 333 | R SMD 220R 0W10 | 31425815 |
| RAV | 27, 33, 41, 46, 49, 57, 58, 64, 66, 67, 68, 76, 87, 89, 156, 191, 193, 218, 248, 276, 281, 286, 287, 288, 353 | R SMD 10K 0W10 | 31425833 |
| RAV | 28⚠ | R FUS V RAD 4R7 5% 0W25 | 31860002 |
| RAV | 36, 60, 98, 107, 113, 116, 118, 121, 124, 127, 131, 133, 137, 139 | R SMD 100K 0W10 | 31425844 |
| RAV | 37, 56, 284, 289 | R SMD 22K 0W10 | 31425837 |
| RAV | 38, 356 | R SMD 27K 0W10 | 31425839 |
| RAV | 39, 88, 282, 304, 312, 319, 327, 334, 336 | R SMD 2K2 0W10 | 31425828 |
| RAV | 47⚠ | R FUS V RD 47R 0W25 | 31860006 |
| RAV | 48, 84, 86 | R SMD 47K 0W10 | 31425836 |
| RAV | 52, 53, 92, 96, 97, 216, 217, 277, 278, 283, 285, 348, 349 | R SMD 270R 0W10 | 31425855 |
| RAV | 54, 91, 299, 307, 314, 322, 341 | R SMD 390R 0W10 | 31425816 |
| RAV | 55 | R SMD 0R 0W10 | 31425802 |
| RAV | 59, 71, 72, 77, 83, 244 | R SMD 4K7 0W10 | 31425824 |
| RAV | 62 | R SMD 150R 0W10 | 31425812 |
| RAV | 73, 74, 78, 81, 106, 123, 129, 136, 142, 144, 183, 184, 186, 187, 188, 189, 222, 235, 259, 261, 300, 301, 308, 316, 323, 331, 332 | R SMD 100R 0W10 | 31425852 |
| RAV | 103, 104, 112, 143 | R SMD 220K 0W10 | 31425847 |
| RAV | 105, 110, 196, 201, 344, 346 | R SMD 33K 0W10 | 31425840 |
| RAV | 146, 147, 148, 149, 151, 152, 153, 154 | R SMD 1M0 0W10 | 31425801 |
| RAV | 192, 198 | R SMD 47R 0W10 | 31425809 |
| RAV | 194, 197, 351 | R SMD 68K 0W10 | 31425838 |
| RAV | 199 | R CARF RAD 180R 5% 0W25 | 31630026 |
| RAV | 237, 238 | R CARF AX 270R 0W25 | 31548624 |
| RAV | 239, 241, 242, 290 | R SMD 3K9 0W10 | 31425830 |
| RAV | 243, 253, 254 | R SMD 1K5 0W10 | 31425826 |
| RAV | 265, 302, 309, 317, 324 | R SMD 22R 0W10 | 31425849 |
| RAV | 295 | R SMD 1K8 0W10 | 31425827 |
| RAV | 326 | R SMD 33R 0W10 | 31425808 |
| RAV | 338 | R SMD 910R 0W10 | 31425883 |
| RAV | 339 | R SMD 430R 0W10 | 31425879 |
| RAV | 343 | R SMD 300R 0W10 | 31425856 |
| RAV | 347, 354 | R SMD 18K 0W10 | 31425813 |
| RAV | 352 | R SMD 6K81 0W10 | 31490455 |
| RAV | 355 | R NTC SMD 33k | 31910002 |

| Item | Description | Order no. |
|---|---|---|
| **CAPACITORS** | | |
| CAV 1, 2, 3, 4, 6, 7, 9, 11, 21, 22, 67, 69, 72, 77, 82, 87, 111, 164, 173, 179 | C CER1 SMD 390P 50V | 32145428 |
| CAV 8, 23, 26, 28, 41, 260, 265 | C ECAP RAD 2U2 63V | 34540023 |
| CAV 12, 102, 106, 107, 142, 167, 187, 216, 219, 233, 240, 250, 255, 263, 268, 279, 280, 289 | C ECAP RAD 10U 63V | 34540025 |
| CAV 13 | C CER1 SMD 220P 50V | 32125513 |
| CAV 14, 215 | C CER1 SMD 10P D 50V | 32125506 |
| CAV 16 | C (M)KT RAD 1U0 63V | 33124758 |
| CAV 17, 24, 56, 64, 118, 121, 238, 239, 241, 246, 247, 248, 249, 252, 251, 253, 254, 256, 257, 258, 259, 285, 287, 288 | C CER2 SMD 10N 50V | 32536213 |
| CAV 18 | C ECAP RAD 470U 16V | 34220551 |
| CAV 19, 29, 32, 33, 34, 37, 38, 39, 44, 47, 49, 51, 60, 61, 101, 103, 112, 143, 166, 188, 120, 139, 212, 213, 214, 217, 218, 221, 223, 228, 229, 232, 236, 237, 242, 270, 271, 272, 278, 282, 283, 284, 286, 294 | C CER2 SMD 100N 25V | 32190001 |
| CAV 27, 146, 148, 151, 153, 156, 158, 162, 171, 182 | C CER2 SMD 220N 16V | 32525900 |
| CAV 31 | C CER1 SMD 22P 50V | 32180027 |
| CAV 36, 168, 178 | C ECAP RAD 47U 50V | 34540028 |
| CAV 42, 43, 202, 203, 226, 227 | C CER1 SMD 33P 50V | 32125507 |
| CAV 46, 48, 52, 117, 119, 222 | C ECAP RAD 100U 25V | 34540020 |
| CAV 53, 62, 73, 78, 83, 88, 234 | C ECAP RAD 22U 35V | 34540021 |
| CAV 54, 63, 74, 79, 84, 89, 90, 91, 92, 93, 113, 116, 122, 123, 124, 176, 269 | C CER1 SMD 1N0 50V | 32125545 |
| CAV 57, 58, 59, 66, 68, 71, 76, 81, 86, 94 | C CER2 SMD 330N 16V | 32525901 |
| CAV 65, 125, 141, 231 | C ECAP RAD 47U 16V | 34223251 |
| CAV 96, 97 | C CER1 SMD 1P2 50V | 32180008 |
| CAV 98, 99, 105, 108, 293 | C CER1 SMD 47P 50V | 32125508 |
| CAV 104 | C ECAP RAD 3U3 63V | 34540029 |
| CAV 137, 138, 245 | C ECAP RAD 1U0 100V HV | 34229675 |
| CAV 144, 147, 149, 152, 154, 157, 159 | C CER1 SMD 330P 50V | 32125517 |
| CAV 161, 169, 177, 191, 193 | C CER2 SMD 47N 50V | 32536222 |
| CAV 163, 172, 181, 189, 194 | C CER1 SMD 1N550V | 32190025 |
| CAV 183 | C CER2 SMD 680N 10V | 32525905 |
| CAV 184, 186 | C CER1 SMD 6P8 D 50V | 32190009 |
| CAV 192, 196, 197 | C CER2 SMD 68N 50V | 32790052 |
| CAV 199, 291 | C CER1 SMD 82P 50V | 32125531 |
| CAV 224 | C (M)KT RAD 470N 63V | 33127123 |

| Item | Description | Order no. |
|---|---|---|
| CAV 243, 244 | C CER1 SMD 39P 50V | 32125512 |
| CAV 262, 267, 281 | C CER1 SMD 2N250V | 32190026 |
| CAV 264, 266 | C CER1 SMD 27P 50V | 32125509 |
| CAV 275 | C CER1 SMD 100P 50V | 32125515 |
| CAV 277 | C ECAP RAD 4U7 63V | 34540024 |
| CAV 297 | C CER2 SMD 470N 16V | 32525903 |
| **TRANSISTORS** | | |
| TAV 1 | TR NPN RAD BC547B 45V | 36220002 |
| TAV 2, 3, 7, 8, 9, 11, 12, 13, 16, 18, 20, 22, 23, 26, 27, 29, 31, 33, 34, 37, 38, 39, 41, 42, 43, 44 | TR NPN SMD BC847B 45V | 36145312 |
| TAV 4, 24, 25, 28, 32, 35, 36 | TR PNP SMD BC857B 45V | 36145412 |
| TAV 14 | TR PNP RAD BC557B 45V | 36146424 |
| **DIODES** | | |
| DAV 1 | DIODE SMD BAV70 70V | 36561954 |
| DAV 2, 3 | DI SMD LS4148 75V 200mA | 36490002 |
| DAV 9, 11, 12, 13 | DIODE SMD BAS16 75V | 36560318 |
| **ZENERS** | | |
| ZDAV 1, 2, 4 | Z DIODE SMD BZX84C 8V2 5% | 36780003 |
| ZDAV 3 | Z DIODE AX BZX83C 10V 5% | 36770002 |
| ZDAV 5 | Z DIODE SMD BZX84B 5V6 2% | 36780021 |
| ZDAV 6 | Z DIODE SMD BZX84C 3V3 5% | 36770018 |
| **INTEGRATED CIRCUITS** | | |
| ICAV 1 | IC VIDEO TEA6417 | 37440012 |
| **ICAV 2** | **IC EPROM 1MX8 M27C801-150F1 CURRENT SOFTWARE VERSION 25.03.2002** | **TZAE16.0** |
| ICAV 2 | IC SOCKET DIL32 | 41520751 |
| ICAV 3 | IC-TL7705ACDR | 37460011 |
| ICAV 4 | IC LOGIC SMD 74HCT08 14 | 37810023 |
| ICAV 5 | IC uC SMD SDA30C264M2 | 37857014 |
| ICAV 6, 10 | IC OPAMP SMD MC33078D8 | 37470007 |
| ICAV 7 | IC AUDIO MSP3410G-PP-B8-V3 | 37430037 |
| ICAV 11 | IC VIDEO SMD VPC3230D-QA-B3 | 37850222 |
| ICAV 12 | IC VIDEO SMD SDA9400 | 37850224 |
| ICAV 13 | IC VIDEO SMD SDA5275-3P | 37857044 |
| ICAV 15 | IC DRAM SMD 4Mx4 MSM5116400D-60J26 | 37688004 |
| ICAV 16 | IC VIDEO SMD SDA9489X-B31 | 37850241 |
| ICAV 18 | IC VIDEO SMD DDP3310B-PT-F6 | 37850234 |
| ICAV 19 | IC EEPROM SMD 4kx8 24LC32A | 37866011 |
| **COILS** | | |
| LAV 1, 2, 3, 4 | COIL SMD 2.2uH 30mA | 45640023 |
| LAV 8 | COIL RAD 10uH 600mA | 45571680 |
| LAV 9, 10, 11, 12, 13, 14, 16 | COIL SMD 3.3uH 30mA | 45640024 |
| LAV 17, 18, 19, 26, 27, 28, 29, 30, 31, 32 | COIL BLK 10uH 1200mA RAD | 45571699 |

| Item | Description | Order no. |
|---|---|---|
| LAV 23 | COIL SMD 6.8uH 15mA | 45640025 |
| LAV 24, 33 | COIL SMD 10uH 15mA | 45640026 |
| **CRYSTALS** | | |
| ZAV 1 | CRYSTAL RAD 12.00MHz | 45730005 |
| ZAV 2 | CRYSTAL BLK 18.432 MHz | 45710011 |
| ZAV 4 | CRYSTAL BLK 20.250 MHz | 45730011 |
| ZAV 6 | CRYSTAL RAD 20.48MHz | 45730004 |
| ZAV 7 | CRYSTAL RAD 20.250 MHz | 45710006 |
| ZAV 8 | CRYSTAL BLK 5.000 MHz | 45730012 |
| **OTHERS** | | |
| XAF 1 | CONN HEADER 20-PIN | 41710071 |
| XAH 1 | CONN HEADER 10-PIN | 41710070 |
| XAV 1 | MODULE CONN 9-PIN | 41720002 |
| XAV 2, 3 | CONN MODULE 19-PIN | 41720048 |
| XAV 4 | SCART CONNECTOR, BLACK | 41450292 |
| XAV 5 | SCART CONNECTOR, BLUE | 41910004 |
| XAV 6 | SCART CONNECTOR, ORANGE | 41910005 |
| XAV 9 | CONN MODULAR 6-PIN | 41910002 |
| JAV 2, 4, 9, 15, 16, 23, 26, 27, 28, 32, 36, 38, 39, 41, 42, 44, 45, 47, 48, 49 | R SMD 0R 0W10 | 31425802 |
| JAV 6, 7, 8 | JUMPER R=20,0 mm | 85600102 |
| JAV 13, 29, 40 | JUMPER R=12,5 mm | 85600078 |
| JAV 46 | JUMPER R=17,5 mm | 85600092 |
| W 1, 2 | JUMPER R=75 | 85500855 |
| | SUPPORT PAD | 66390038 |
| | AV MODULE BRACKET | 84481920 |
| | SIGNAL BOX BOTTOM | 84860590 |
| | SIGNAL BOX LID | 84860600 |

## FC101 Control unit module

| | | |
|---|---|---|
| **RESISTORS** | | |
| RFC 1, 2, 31 | R SMD 47K 0W10 | 31425836 |
| RFC 3, 4 | R SMD 75R 0W10 | 31425861 |
| RFC 5 | R SMD 470R 0W10 | 31425817 |
| RFC 7 | R SMD 22K 0W10 | 31425837 |
| RFC 9, 12 | R SMD 1K0 0W10 | 31425820 |
| RFC 10, 16 | R SMD 15K 0W10 | 31425835 |
| RFC 13 | R SMD 330R 0W25 | 31425614 |
| RFC 14, 17 | R SMD 100K 0W10 | 31425844 |
| RFC 19, 20 | R SMD 10K 0W10 | 31425833 |
| RFC 21, 22 | R CARF AX 2K2 5% 0W25 | 31660037 |
| RFC 26 | R CARF AX 100R 0W25 | 31660049 |
| RFC 27⚠ | R FUS V RD 150R 0W25 | 31860004 |
| RFC 37 | R SMD 10K 0W25 | 31425635 |
| RFC 41 | R SMD 390R 0W10 | 31425816 |
| RFC 43, 44, 45, 48, 49 | R SMD 1M0 0W10 | 31425801 |
| RFC 47 | R SMD 270R 0W10 | 31425855 |
| RFC 52⚠ | R FUS V AX 4K7 0W50 | 31850009 |
| RFC 55 | R SMD 4K7 0W10 | 31425824 |
| RFC 56⚠ | R FUS V RD 47R 0W25 | 31860006 |
| J 2, 5, 31, 33, 38, 48, 49, 51, 52, 53 | R SMD 0R 0W10 | 31425802 |
| JFC 10 | R SMD 0R 0W25 | 31425601 |
| JFC 14, 15, 16, 17 | R SMD 0R 0W10 | 31425802 |
| **CAPACITORS** | | |
| CFC 1⚠, 2⚠ | C MP/P BLK 100N 275VAC X2 | 33260003 |
| CFC 3 | C ECAP RAD 470U 10V | 34221242 |
| CFC 4 | C ECAP BLK 1000U 16V | 34550001 |
| CFC 5, 7 | C CER2 SMD 4N7 50V | 32536210 |
| CFC 8, 20 | C ECAP RAD 10U 35V | 34540027 |
| CFC 10, 13 | C CER1 SMD 390P 50V | 32145428 |
| CFC 11, 16, 17, 18, 19, 32 | C CER2 SMD 10N 50V | 32536213 |
| CFC 14, 15 | C ECAP RAD 100U 25V | 34540020 |
| CFC 21, 22 | C CER1 RAD 15P 100V | 32180003 |
| CFC 27 | C ECAP RAD 2U2 400V | 34540097 |
| CFC 35 | C CER2 SMD 100N 25V | 32190001 |
| CFC 36 | C CER2 RAD 47P 1K0V | 32790054 |
| CFC 42 | C CER2 RAD 1N5 S 2K0V | 32670976 |
| **TRANSISTORS** | | |
| TFC 3, 5, 6, 7, 8 | TR NPN SMD BC847B 45V | 36145312 |
| **DIODES** | | |
| DFC 1 | DI RECT PWR AX BYV36C 600V | 36575452 |
| DFC 4 | LED RAD LS5460HL RED 5mm | 36910004 |
| DFC 6, 7 | DI RECT PWR AX BY527 1K25V 2AD57 | 36610001 |
| DFC 11-1⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| DFC 17 | LED RAD LG5460GK GREEN 5mm | 36910005 |
| | DI TRC BLK MAC9M 600V 8A | 36471103 |
| | THYRISTOR HOLDER SPRING | UC0859 |
| **ZENERS** | | |
| DZFC 1 | Z DIODE AX BZX55B 4V3 2% | 36770031 |
| **INTEGRATED CIRCUITS** | | |
| ICFC 1 | IC PWR CONT TNY253P | 37410032 |
| ICFC 2⚠ | IC OPTO TRIAC TLP763JF | 36950010 |
| ICFC 3⚠ | IC OPTO COUPL SFH615A-2 | 36950009 |
| **FUSES** | | |
| FFC 1⚠ | FUSE T3,15A HIGH BREAK 5X20MM | 43751652 |
| FFC 1⚠ | FUSEHOLDER CLIPS 5*20MM | 41540001 |
| **TRANSFORMERS** | | |
| MFC 2⚠ | MAINS TRAFO 2262,0029B/TM2673 | 45310006 |
| MFC 1-1⚠, 1-2⚠, 1-3⚠, 1-4⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| **COILS** | | |
| LCF 1, 2 | COIL AX 40uH 2000mA | 45620057 |
| LFC 3, 4, 7, 8, 9 | COIL SMD 10uH 15mA | 45640026 |
| LFC 5, 6 | COIL SMD 2,2uH 30mA | 45640023 |
| LFC 10 | COIL BLK 10uH 1200mA RAD | 45571699 |

| Item | Description | Order no. |
|---|---|---|
| LFC 2-1⚠, 2-2⚠, 1-1⚠, 1-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| MFC 1⚠ | COIL MAINS BLK TRE293/30H | 45390023 |
| **OTHERS** | | |
| A 2, 4 | MODULE SUPPORT | 81408167 |
| HFC 1 | IR-RECEIVER TSOP1738 3-PIN | 58880977 |
| DFC 9 | JUMPER R=12,5 mm | 85600078 |
| SWFC 1, 2, 3, 4 | TACTILE SWITCH 4 | 41150685 |
| UFC 1-1⚠, 1-2⚠, 1-3⚠, 1-4⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| UFC 1⚠ | MAINS SWITCH 250V 6/120A | 41210011 |
| XA 5 | SIGNAL CABLE 20-PIN 600mm | 96010197 |
| XFC 1-1⚠, 1-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| XFC 1 | ROW CONN 2-PIN VERT LOCK | 73184750 |
| XFC 6 | CONN RCA 3 IN ROW | 41430747 |
| XFC 9 | CONN S-VHS FOR PCB 90-DEG | 41452244 |
| XFC 10 | CONN PHONO 3,5mm JACK WITH SENSE SWITCH | 41910001 |
| XO 2-1⚠, 1-1⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| XO 2 ⚠ | WIREPLUG FOR 2-PIN 410mm COVER FOR CAMERA CONNECTOR | 96008011 84488890 |
| J 50 | JUMPER R=20,0 mm | 85600102 |
| J 54 | JUMPER R=10,0 mm | 85600061 |
| J 50-1⚠, 50-2⚠ | CONN GRIPLET FOR 2-SIDED PCB d=1,9mm | 41930009 |
| J 1, 3, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 39 | JUMPER R=12,5 mm T | 85600078 |

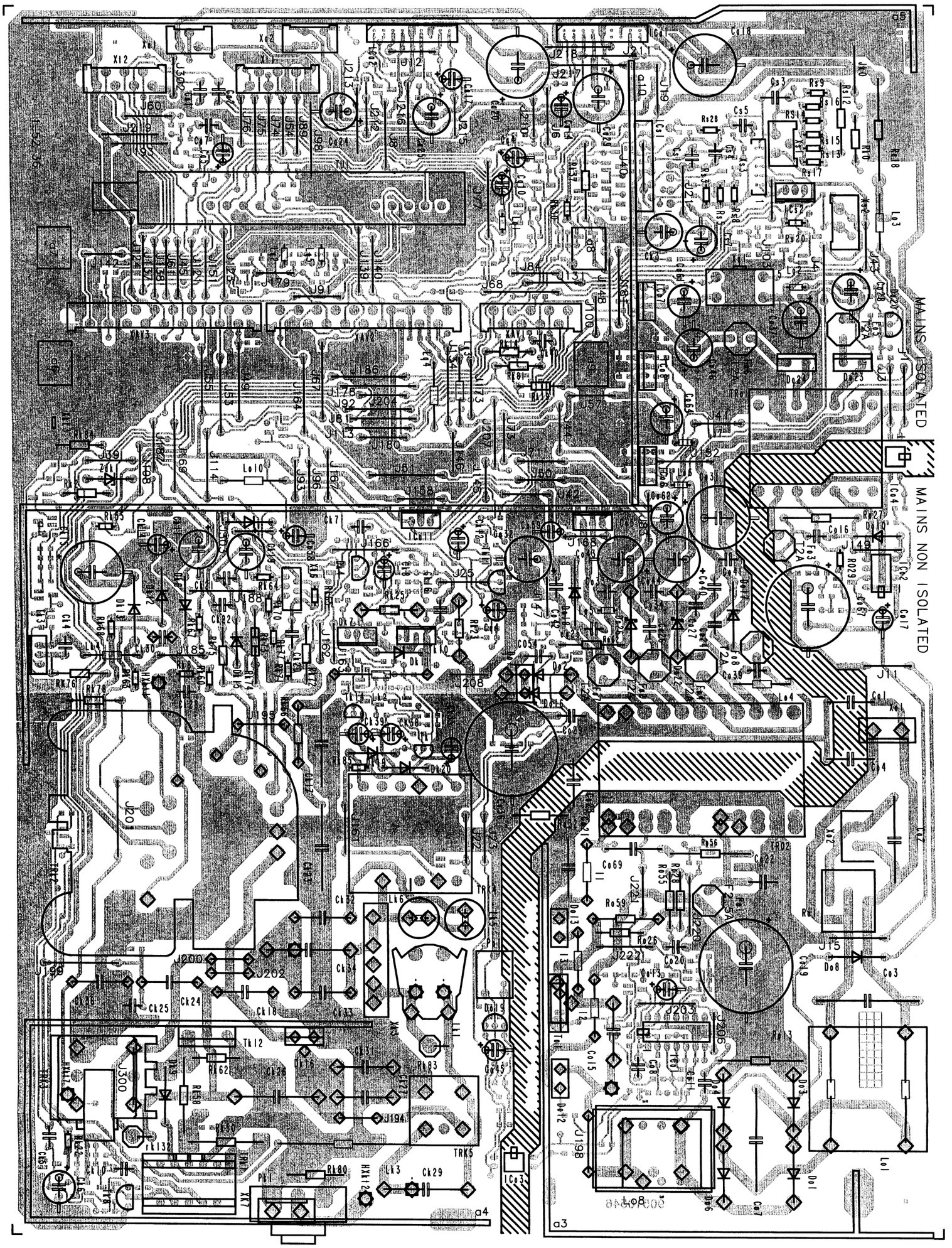
## HH135 CRT module

| Item | Description | Order no. |
|---|---|---|
| **RESISTORS** | | |
| RH 1 | R SMD 3K0 0W10 | 31490062 |
| RH 2 | R SMD 1K00 0W10 | 31490056 |
| RH 3, 12, 16 | R SMD 0R 0W10 | 31425802 |
| RH 4, 13, 17 | R METF AX 68K 2% 1W0/73 | 31440008 |
| RH 6, 7, 8, 9, 11, 14 | R SMD 1K5 0W10 | 31425826 |
| RH 18, 19, 21, 22, 23, 24 | R COMP AX 470R 0W25 | 31595565 |
| RH 26 | R CARF RAD 33K 5% 0W25 | 31630036 |
| RH 27 | R CARF AX 4M7 5% 0W25 | 31660029 |
| RH 28, 33 | R COMP AX 1K5 0W50 | 31594639 |
| RH 31 | R SMD 68R 0W10 | 31425876 |
| RH 36 | R SMD 100K 0W10 | 31425844 |
| RH 37 | R SMD 2K2 0W10 | 31425828 |
| RH 38 | R SMD 470R 0W10 | 31425817 |
| RH 39, 59 | R SMD 1K0 0W10 | 31425820 |
| RH 40 | R SMD 100R 0W10 | 31425852 |
| J 19 | R CARF AX 270R 5% 0W25 | 31660011 |
| J 22 | R SMD 0R 0W10 | 31425802 |
| **CAPACITORS** | | |
| CH 1 | C ECAP RAD 47U 16V | 34223251 |
| CH 2, 3, 7, 8, 12, 13 | C CER2 SMD 22N 50V | 32536221 |
| CH 4, 9, 14, 19 | C (M)KT RAD 22N 250V 4X8 | 33380002 |
| CH 5 | C CER1 SMD 68P 50V | 32125516 |
| CH 6, 11, 16 | C CER2 SMD 1N0 50V | 32536203 |
| CH 17 | C ECAP BLK 4U7 250V HV | 34610001 |
| CH 18 | C ECAP BLK 10U 250V HV | 34610002 |
| CH 22 | C (M)KT BLK 8N2 1K5V | 33360007 |
| CH 27, 43 | C ECAP RAD 10U 63V | 34540025 |
| CH 28 | C ECAP RAD 100U 25V | 34540020 |
| CH 46 | C CER2 SMD 4N7 50V | 32536210 |
| **TRANSISTORS** | | |
| TH 1 | TR NPN RAD BF422 250V | 36125217 |
| TH 2 | TR PNP SMD BC857B 45V | 36145412 |
| **DIODES** | | |
| DH 1, 2 | DI RECT PWR AX BYV36C 600V | 36575452 |
| DH 3, 4, 5 | DIODE SMD BAS16 75V | 36560318 |
| DH 6, 7, 8 | DI SMD BAV103 200V 250mA | 36561950 |
| **ZENERS** | | |
| ZDH 1 | Z DIODE SMD BZV55C 22V 5% | 36780015 |
| **INTEGRATED CIRCUITS** | | |
| ICH 1, 2, 3 | IC VIDEO TDA6111Q-N4C DBS9MP | 37440004 |
| **COILS** | | |
| LH 1 | COIL AX 10UH 10% 230mA | 45620003 |
| LH 6 | COIL AX 10uH 1200mA | 45571698 |
| **OTHERS** | | |
| CRT 1, 2 | BLADE CONN 2.8MM FOR PCB MALE | 41930001 |
| S 1 | SPARK GAP 2,0kV +/-500V | 41555001 |
| SOH 1⚠ | CRT SOCKET 0330 5500 34 | 41554034 |
| UG 2 | BLADE CONN 2.8MM FOR PCB MALE | 41930001 |
| XH 1 | WIRE BUNDLE 6-PIN 370mm | 96010019 |
| XH 2 | RGB CABLE 10-PIN | 96010198 |
| | PT-SCREW 3,5x6,5 POZ DIN7981 | 62038859 |
| J 4, 18, 24, 29, 30, 31 | JUMPER R=10,0 mm | 85600061 |
| J 17, 20 | JUMPER R=12,5 mm | 85600078 |
| J 21, 25, 27, 28, 32 | JUMPER R=7,5 mm | 85600054 |

# PP100 Twin tuner pip module

| Item | Description | Order no. |
|---|---|---|
| **RESISTORS** | | |
| RPP 3, 8, 24, 26, 41, 42, 43, 44, 47 | R SMD 10K 0W10 | 31425833 |
| RPP 5, 6 | R SMD 270R 0W10 | 31425855 |
| RPP 7, 22, 25, 30, 31, 32, 45, 48 | R SMD 100K 0W10 | 31425844 |
| RPP 10 | R SMD 330R 0W10 | 31425857 |
| RPP 11 | R SMD 150R 0W10 | 31425812 |
| RPP 12, 13 | R SMD 22K 0W10 | 31425837 |
| RPP 14, 16, 27, 28, 29, 50 | R SMD 470R 0W10 | 31425817 |
| RPP 15 | R SMD 12K 0W10 | 31425834 |
| RPP 17 | R SMD 1K0 0W10 | 31425820 |
| RPP 18, 20 | R SMD 33K 0W10 | 31425840 |
| RPP 19, 40, 46 | R SMD 100R 0W10 | 31425852 |
| RPP 21, 23, 38 | R SMD 180K 0W10 | 31490012 |
| RPP 33 | R SMD 680K 0W10 | 31490059 |
| RPP 34 | R SMD 56K 0W10 | 31425842 |
| RPP 35 | R SMD 27K 0W10 | 31425839 |
| RPP 36, 37 | R SMD 1M0 0W10 | 31425801 |
| RPP 39 | R SMD 5K6 0W10 | 31425825 |
| RPP 49 | R SMD 6K8 0W10 | 31425831 |
| **CAPACITORS** | | |
| CPP 1, 2, 12, 16, 22, 34, 35, 36 | C CER2 SMD 100N 25V | 32190001 |
| CPP 3, 4, 20 | C CER1 SMD 18P 50V | 32125520 |
| CPP 5, 8, 23, 24, 25, 26, 27, 28 | C ECAP RAD 22U 35V | 34540021 |
| CPP 6 | C CER2 SMD 22N 25V | 32525705 |
| CPP 7 | C ECAP RAD 4U7 63V | 34540024 |
| CPP 9 | C ECAP RAD 2U2 63V | 34540023 |
| CPP 10, 14 | C ECAP RAD 1U0 63V | 34540022 |
| CPP 11, 18, 31 | C CER2 SMD 10N 50V | 32536213 |
| CPP 13 | C CER2 SMD 4N7 50V | 32536210 |
| CPP 15, 17 | C CER2 SMD 1U0 10V | 32525907 |
| CPP 19 | C ECAP RAD 100U 16V | 34223252 |
| CPP 21 | C ECAP RAD 47U 16V | 34223251 |
| CPP 32, 33 | C CER1 SMD 2N250V | 32190026 |
| **TRANSISTORS** | | |
| TPP 1 | TR NPN SMD BC847B 45V | 36145312 |
| TPP 2, 3, 4, 5 | N-FET SMD 2N7002 60V | 36380002 |
| TTP 6 | TR NPN SMD BC847B 45V | 36145312 |

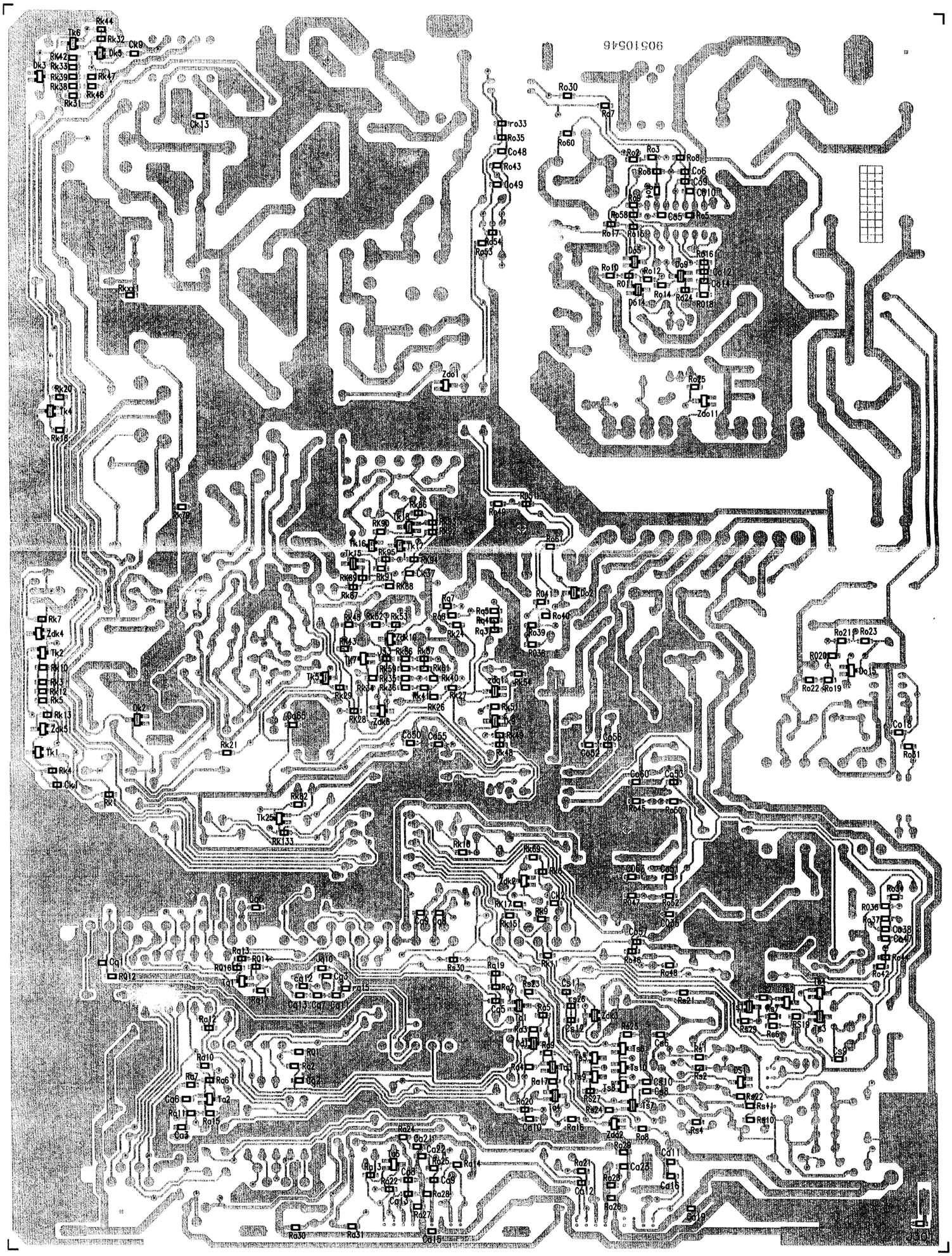
| Item | Description | Order no. |
|---|---|---|
| **DIODES** | | |
| DPP 1, 2 | DI SMD LL4148 75V 200mA | 36560311 |
| **INTEGRATED CIRCUITS** | | |
| ICPP 1 | IC V-REG L78M08CV 8V 0.5A | 37460003 |
| ICPP 2 | IC VIDEO SMD TDA6930X28 | 37450009 |
| ICPP 3, 4 | IC OPAMP SMD TL082CD 8 | 37470003 |
| **COILS** | | |
| LPP 1, 2 | COIL BLK 10uH 1200mA RAD | 45571699 |
| LPP 3 | COIL ADJ 150nH 5KM-series | 45530020 |
| LPP 4, 5, 6 | COIL SMD 10uH 15mA | 45640026 |
| **FILTERS** | | |
| ZPP 1 | SAW FILTER OFW G3962M BG | 45740003 |
| ZPP 2 | FIL CER BLK TPS 5.5 MB | 45558410 |
| **OTHERS** | | |
| | ANTENNA CABLE ASSY 80mm IEC | 47780006 |
| J 1, 11 | JUMPER R=15,0 mm | 85600085 |
| J 2, 3, 12 | JUMPER R=20,0 mm | 85600102 |
| J 4, 5, 8, 9 | JUMPER R=10,0 mm | 85600061 |
| J 6, 7, 10, 13, 14 | R SMD 0R 0W10 | 31425802 |
| TU 1 | TUNER 4702PH5 | 58231040 |
| X 1, 2 | CONN MODULE 7-PIN | 41720049 |
| X 3 | CONN RCA VERT JPJ1043-01-231 | 41910019 |




**VERSION 6**

# TX/TZ CHASSIS MC2A SERIES 100Hz

66119673


90510546

Video signal (CVBS or Y)
Chroma signal
Sound IF signal
Audio signal (L)
Audio signal (R)
Subwoofer signal
RGB or UV signal
Horizontal deflection signal
Vertical deflection signal
E-W raster correction signal

* not used
** version component
⚠ safety component, must be replaced only with original parts.

** TU1 4006FH5 (BG)
4046FM5 (Multinorm)

PP100
(TWIN TUNER PICTURE IN PICTURE MODULE)

TA100
(AUDIO LINE OUTPUT MODULE)

FC100
(CONTROL UNIT MODULE)

MAINS NON ISOLATED

MAINS ISOLATED

MAINS NON ISOLATED

**VERSION 9**

# CHASSIS MC2A SERIES 100Hz

66117304

AV***** (AV100)
(SIGNAL MODULE)

SUBWOOFER * *

MSP341XG

MC33078
HP-AMP

NVM
32k

uP
SDA30C264

EPROM

TEA 6417
VIDEO
MATRIX

TEXT
SDA5275-3P

RGBFb

DRAM

VPC323X

LUMA-BUS

CHROMA-BUS

SDA9400

SDA9489
(PIP)

DDP3310B

E1 XAV4

E2 XAV5

E3 XAV6

XAV7
EXT
L/R IN

XAV8

XAH1

HH
(CRT

VERT.DEFL.COIL

16:9
PICTURE TILT

10k = 4:3 SETS
8R8 = 16:9 SETS

N ISOLATED

MAINS ISOLATED

E1
E2
E3
XAV4
XAV5
XAV6
XAV7
EXT
L/R IN
XAV8
XAH1
VPC323X
LUMA-BUS
CHROMA-BUS
SDA9400
DDP3310B
SDA9489
(PIP)
DRAM
HH1xx
(CRT BOARD ULE)
SVM **
Vid 28" SF
Phi 28" SF
Tes 28" SF
Tos 32" TFL
Pan 32" TFL
Phi 32" SF
Phi 32" TFL
Phi 28" TFL
** Focus and ug2 potentiometer
(only TZH-, TZJ-, TZK-, TZQ-
and TZS- power units)
** Optional line output transformer
** VGA-horizontal-shift
HORIZONTAL YOKE
SDY
160
16:9 PICTURE TILT
FOCUS
DYN. FOCUS
UG2
EHT
SCL
SDA
5Vp
6V
12V
17V
29kV
23kV

TP1
100V/div 2ms/div
200V

TP10
20V/div 5µs/div
0V

TP2
100V/div 2ms/div
200V

TP11 cvbs
500mV/div 10µs/div
2V

TP3
100V/div 5µs/div
300V

TP4
100V/div 5µs/div
300V

TP5
2V/div 5µs/div
6V

TP6
500mV/div 5µs/div
2V

TP7
500mV/div 5µs/div
2V

TP8
1V/div 5µs/div
2V

TP9
200mV/div 5µs/div
0V

TP12 pip Cvbs
200mV/div 10µs/div
800mV

TP24 2V
5V/div 2ms/div
15V

TP34 2H
5V/div 10µs/div
0V

TP42b 2H
50V/div 10µs/div
100V

TP76 SDA
1V/div 50µs/div
3V

TP15 2H
2V/div 20µs/div
4V

TP26 2H
1V/div 10µs/div
2,5V

TP35 2H
200V/div 10µs/div
400V

TP43a 2V
50V/div 2ms/div
100V

TP77 2H
20V/div 5µs/div
130V

TP16 2V
200mV/div 2ms/div
700mV

TP27 2H
10V/div 10µs/div
10V

TP36 2H
50V/div 10µs/div
0V

TP43b 2H
50V/div 10µs/div
100V

TP17 2V
200mV/div 2ms/div
700mV

TP28 2H
1V/div 10µs/div
3V

TP37 2H
100V/div 10µs/div
-200V

TP44a 2V
20V/div 2ms/div
40V

TP18 2V
2V/div 2ms/div
14,5V

TP29 2V
500mV/div 2ms/div
1,5V

TP38 2H
20V/div 10µs/div
120V

TP44b 2H
20V/div 10µs/div
40V

TP19 2V
10V/div 2ms/div
20V

TP30 2V
5V/div 2ms/div
37 V

TP39 2H
20V/div 10µs/div
40V

TP45 2H
200V/div 10µs/div
400V

TP20 2V
2V/div 2ms/div
4V

TP31 2H
5V/div 10µs/div
10V

TP40 2H
50V/div 10µs/div
100V

TP46 2H
10V/div 10µs/div
0V

TP21 2V
500mV/div 2ms/div
1,5V

TP32 2H
10V/div 10µs/div
20V

TP41 2H
5V/div 10µs/div
15V

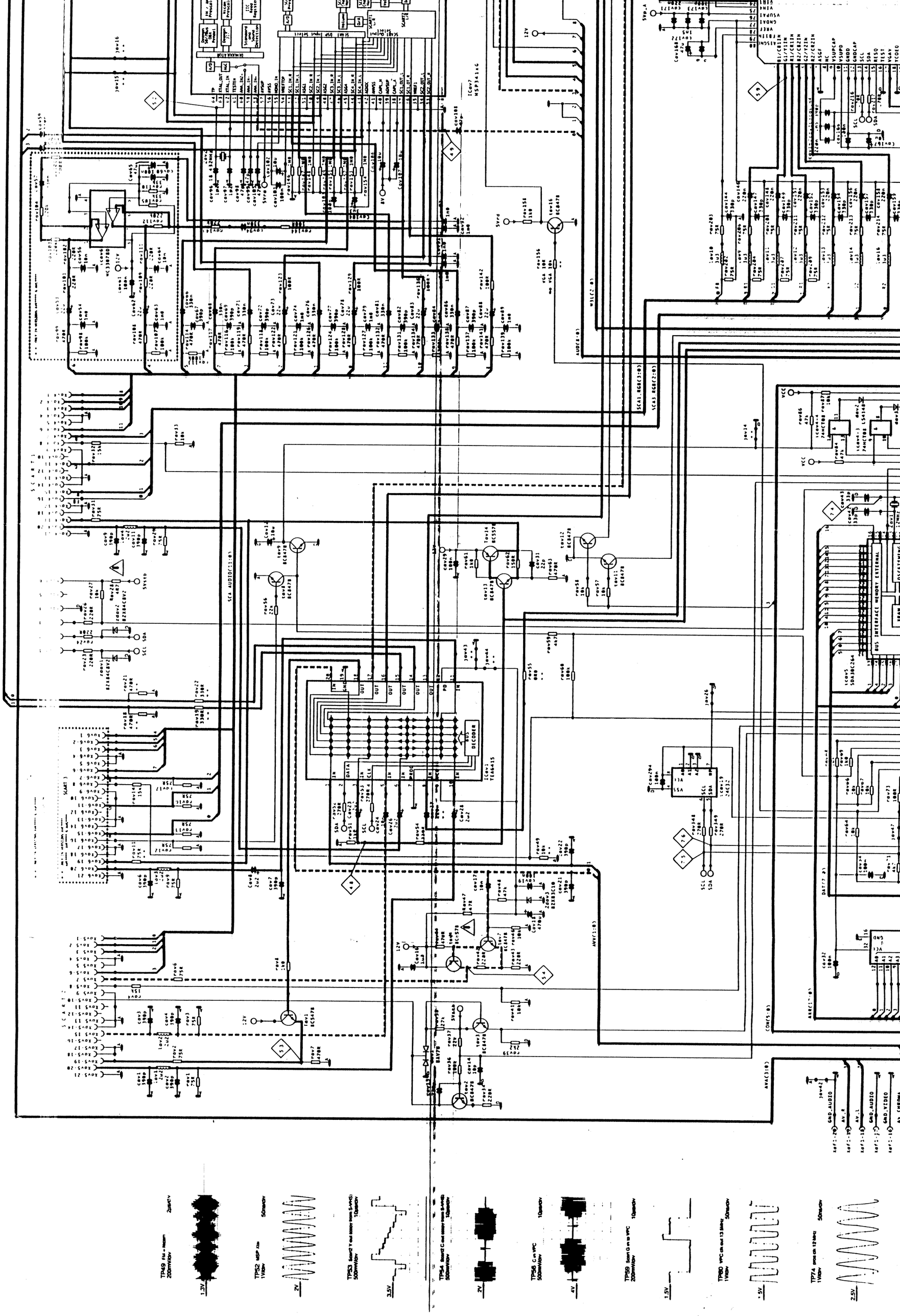
TP47
10mV/div 10µs/div
10V

TP22 2V
500mV/div 2ms/div
1,5V

TP33 2H
5V/div 10µs/div
0V

TP42a 2V
50V/div 2ms/div
100V

TP75 SCL
1V/div 50µs/div
3V


SCART 1
SCART 2
SCART 3
SCART 4
SCART 5
SCART 6
SCART 7
SCART 8
SCART 9
SCART 10
SCART 11
SCART 12
SCART 13
SCART 14
SCART 15
SCART 16
SCART 17
SCART 18
SCART 19
SCART 20
SCART

ICav7
MSP341xG

ICav8
CD40528

ICav10
MC33078D

ICav13
SDAS275-3P

ICav14
MSMS14400

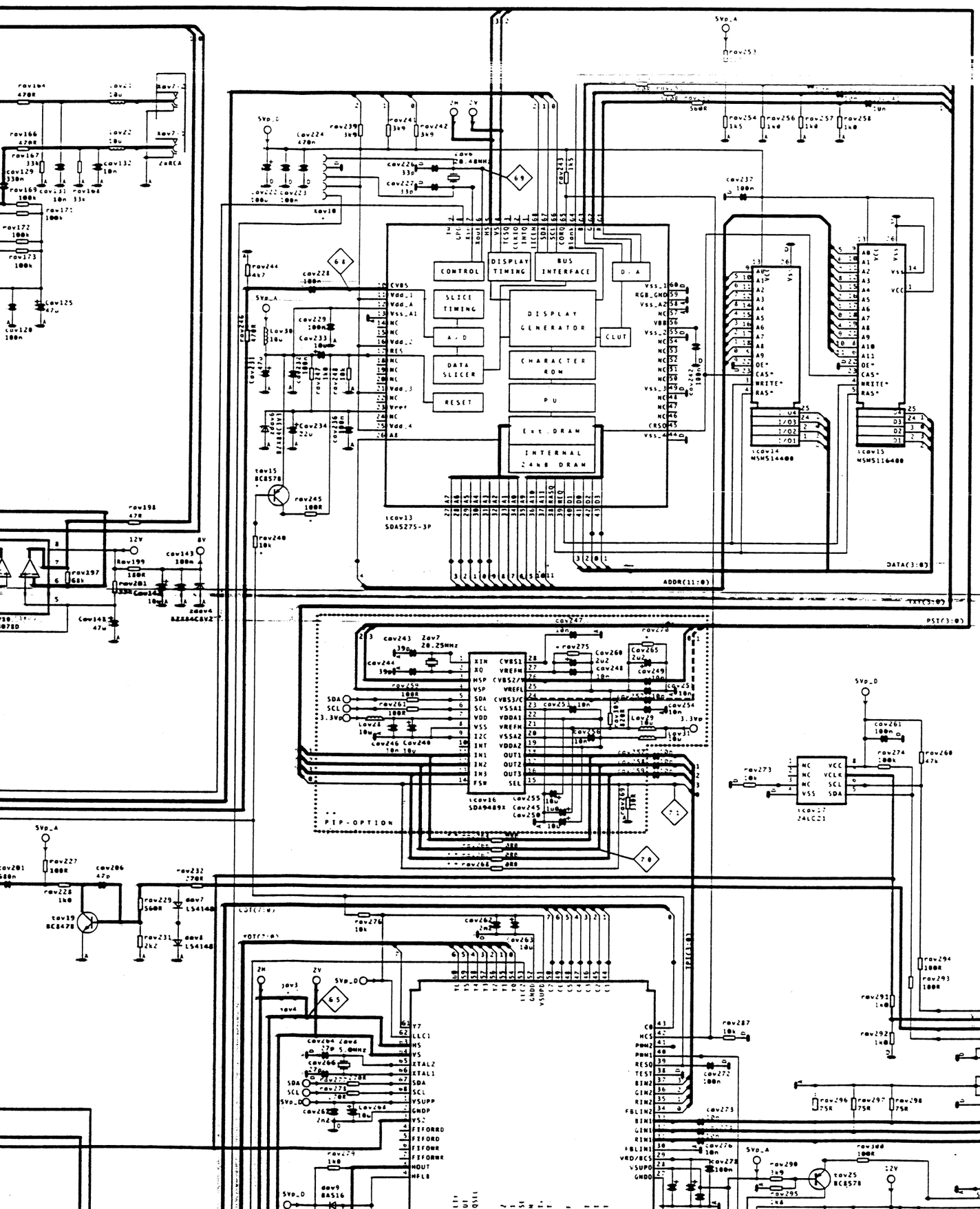
ICav16
SDA9489X

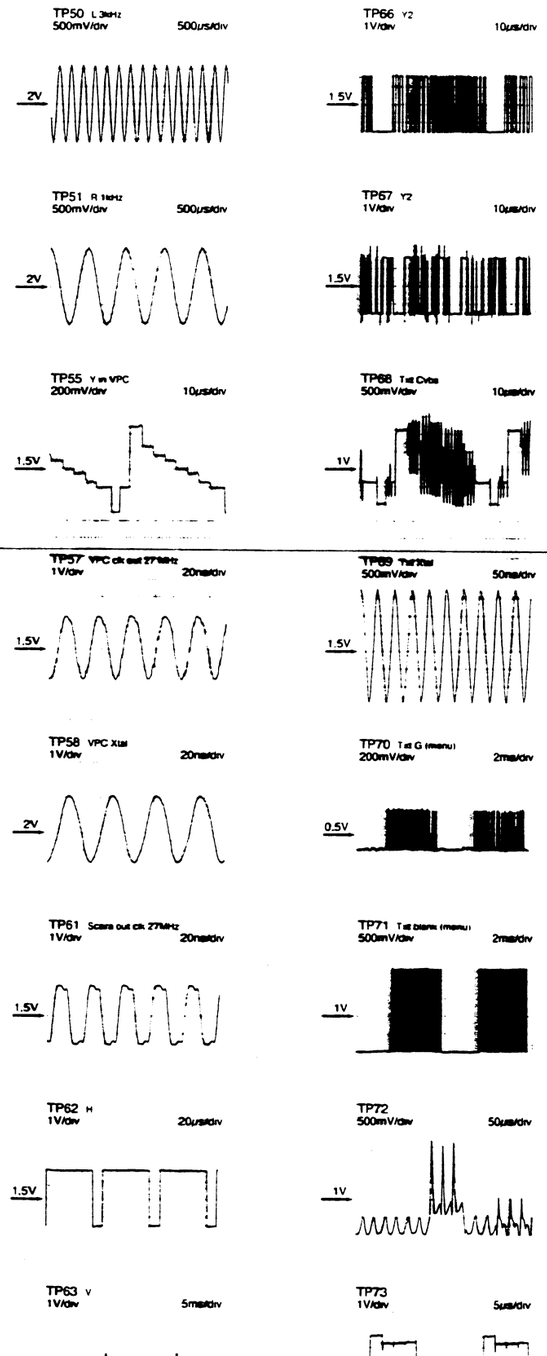
ADDR(11:0)

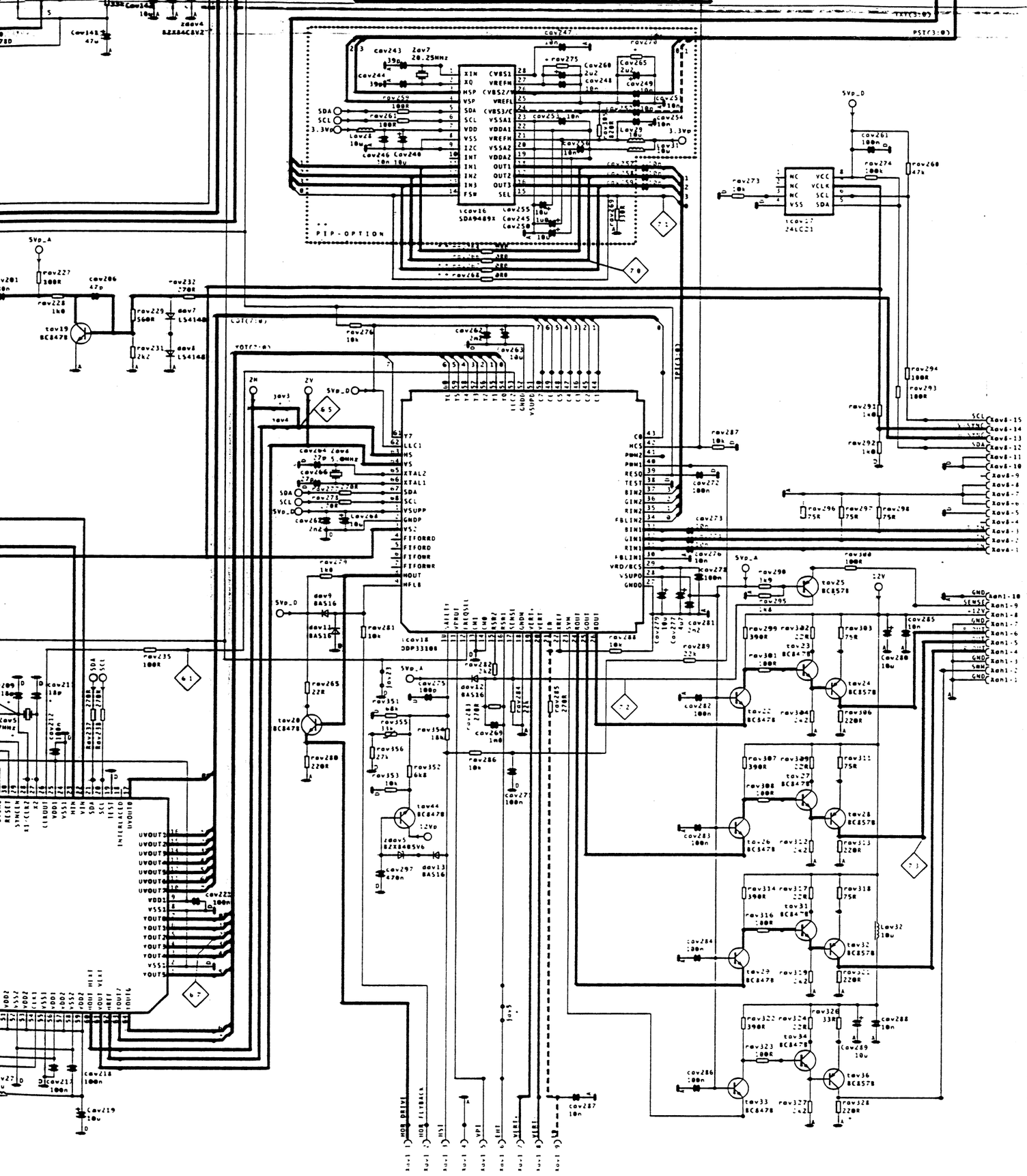
AUD(8:0)

M3L(2:0)

PIP-OPTION


5Vp_A
5Vp_D
CONTROL
DISPLAY TIMING
BUS INTERFACE
D. A
SLICE TIMING
A / D
DATA SLICER
RESET
DISPLAY GENERATOR
CHARACTER ROM
PU
Ext. DRAM
INTERNAL 24kB DRAM
CLUT
CVBS
SDA5275-3P
M5M514400
M5M5116400
ADDR(11:0)
DATA(3:0)
TXT(3:0)
PST(3:0)
TPI(3:0)
VOT(7:0)
SDA9489X
PIP-OPTION
24LC21
BC8578
BZX84C6V2
LS4148
BA516
20.25MHz
5.0MHz
28.63MHz
12V
8V


TP50 L 3kHz
500mV/div
500µs/div
2V
TP66 Y2
1V/div
10µs/div
1.5V
TP51 R 1kHz
500mV/div
500µs/div
2V
TP67 Y2
1V/div
10µs/div
1.5V
TP55 Y on VPC
200mV/div
10µs/div
1.5V
TP68 Tst Cvbs
500mV/div
10µs/div
1V
TP57 VPC clk out 27MHz
1V/div
20ns/div
1.5V
TP69 Tst Xtal
500mV/div
50ns/div
1.5V
TP58 VPC Xtal
1V/div
20ns/div
2V
TP70 Tst G (menu)
200mV/div
2ms/div
0.5V
TP61 Scart out clk 27MHz
1V/div
20ns/div
1.5V
TP71 Tst blank (menu)
500mV/div
2ms/div
1V
TP62 H
1V/div
20µs/div
1.5V
TP72
500mV/div
50µs/div
1V
TP63 V
1V/div
5ms/div
1.5V
TP73
1V/div
5µs/div
2V


PIP-OPTION
SDA
SCL
3.3Vp
5Vp_D
5Vp_A
12Vp
CVBS1
XO
VREFM
HSP
CVBS2/Y
VSP
VREFL
CVBS3/C
VSSA1
VDDA1
VREFM
VSSA2
VDDA2
OUT1
OUTZ
OUT3
SEL
FSW
INT
IN1
IN2
IN3
I2C
SDA9489X
24LC21
NC
VCC
VCLK
VSS
YOUT(7:0)
COUT(7:0)
ZH
ZV
Y7
LLC1
HS
VS
XTALZ
XTAL1
VSUPP
GNDP
FIFORRD
FIFORD
FIFOWR
FIFORWR
HOUT
HFLB
SCL_
SDA_
SYNC
SENSE
-12V
+12V
TP57 VPC clk out 27MHz
1V/div
20ns/div
TP69 Tst bist
500mV/div
50ns/div
TP58 VPC Xtal
1V/div
20ns/div
TP70 Tst G (menu)
200mV/div
2ms/div
TP61 Scaler out clk 27MHz
1V/div
20ns/div
TP71 Tst blank (menu)
500mV/div
2ms/div
TP62 H
1V/div
20µs/div
TP72
500mV/div
50µs/div
TP63 V
1V/div
5ms/div
TP73
1V/div
5µs/div
TP65 H
1V/div
20µs/div
not used
version component
safety component,
must be replaced only with original parts.
Video signal (CVBS or Y)
Chroma signal
Sound IF signal
Audio signal (L)
Audio signal (R)
Subwoofer signal
RGB or UV signal
Horizontal deflection signal
Vertical deflection signal
E-W raster correction signal

AUDIO(8:0)

M3L(2:0)

SCA1_RGB(3:0)

SCA3_RGB(2:0)

CIN(7:0)

YIN(7:0)

VOT(7:0)

ICav7
MSP3415G

ICav11
VPC3230D

ICav10
MC33078D

ICav16
SDA9488X

ICav17
SDA9400

ICav18
DDP3310B

PIP-OPTION

GND AUDIO

GND AUDIO

TUNER_CVBS

PIP_CVBS

HOR DRIVE

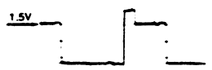
HOR FEEDBACK

VERT.

TP54 Scart2 C out s/stby from S-AHB1
500mV/div 10µs/div

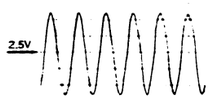
TP56 C on VPC
500mV/div 10µs/div

TP59 Scart C in to VPC
200mV/div 10µs/div




TP60 VPC clk out 13.5MHz
1V/div 50ns/div

TP74 prog clk 12 MHz
1V/div 50ns/div




TP75 SCL
1V/div 50µs/div

TP76 SDA
1V/div 50µs/div

**VERSION 9 / 10**

# SIGNAL MODULE AV***** (AV100) MC2A SERIES

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